THIS WEEK'S National Petroleum NEWS

Coming Meetings

Tennessee Oil Men's Association, Peabody Hotel, Memphis, Tenn., April 22.

Kansas Oil Men's Association, Hotel Lassen, Wichita, Kan., April 23, 24.

National Petroleum Association, Hotel Cleveland, Cleveland, O., Apr. 23, 24.

Independent Petroleum Association, Tulsa, April 24.

American Petroleum Institute, Central Group on Automotive Transportation, Adolphus Hotel, Dallas, Tex., April 27, 28.

Indiana Petroleum Association, Severn Hotel, Indianapolis, Ind., May 6, 7.

American Gas Association, Natural Gas Department, Memphis, Tenn., May 11 to 14.

American Oil Chemists Society, New Orleans, La., May 14, 15.

Natural Gasoline Association of America, Mayo Hotel, Tulsa, May 19, 20, 21.

American Petroleum Institute, Division of Production, Baker Hotel, Dallas, Tex., June 3, 4.

American Society of Mechanical Engineers, National Oil & Gas Power meeting, Madison, Wis., June 15 to 18.

American Society for Testing Materials, Chicago, June 22 to 26.

American Institute of Mining and Metallurgical Engineers, Petroleum Division, Houston, Tex., Oct. 2, 3.

American Petroleum Institute, annual meeting, Stevens Hotel, Chicago, Nov. 10 to 12.

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Representative of Oil States and the Oil Board

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STANDING is Cicero I. Murray, attorney and newspaper publisher in Oklahoma, and the representative of Governor Murray of that state on the Oil States Advisory Committee. He is chairman of the committee.

Seated are the four cabinet officers who are members of the Federal Oil Conservation Board. Left to right, Secretary of Commerce Lamont; Secretary of the Interior Wilbur, chairman of the board, Secretary of War Hurley and Secretary of the Navy Adams. The picture was taken at the opening of the meeting of the oil board with the oil states committee in Secretary Wilbur's office in Washington April 9.

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Major Oil Companies Recognize Low Price Gas Customer

By E. L. Barringer
N. P. N. STAFF WRITER

CHICAGO, April 11

RECOGNITION has been accorded the gasoline customer who buys on price by two major oil companies marketing in the middle west.

Standard Oil Co. of Indiana April 9 announced a new third grade of gasoline for its territory, named Stanolind Blue, to sell 2 cents below the retail price of Red Crown gasoline. This grade is expected to be on sale at major cities the week of April 12.

The Pure Oil Co. April 11 began marketing a third grade, on a price appeal, through company stations in Minneapolis and St. Paul, named Purol gasoline. Dealers in these cities will be stocked with Purol. Where necessary to meet competition this grade will be placed on sale in other mid-western points.

Chicago offices of other major oil companies operating in Indiana Standard territory reported today no changes in marketing policies yet to conform with Pure Oil's and Standard of Indiana's new brands. Regional executives reports ranged from "thinking it over" to "awaiting developments."

Service station prices of gasoline were reduced 1 cent April 11 by the Indiana Standard. This brings service station and tank wagon prices to the same level.

In the new quantity discount agreement schedule, effective at once, dealers and consumers receive larger discounts on Red Crown and Ethyl gasoline than on Stanolind Blue. The commission to authorized agents is 1 cent on Stanolind Blue, 2½ cents on Red Crown and 3 cents on Ethyl gasoline.

Executives of the Indiana Standard and Pure Oil were emphatic in announcing that no equipment would be involved in handling the new low price gasolines to dealers or consumers. Dealers and customers wanting Stanolind Blue and not having facilities will have to provide their own tanks and pumps.

As for these companies' stations no marked changes in equipment are involved with the introduction of a third brand. In years past Standard Oil had three grades: Red Crown; Solite, a high test gasoline; then Ethyl gasoline. Solite gradually was withdrawn from the market. Pure Oil previously had its regular grade, an anti-knock brand, and then another anti-knock with Ethyl.

While no announcement has been made on the quality of Stanolind Blue officials intimated it was better than U. S. Motor specifications. The Red Crown grade also is to be improved as to volatility and anti-knock qualities.

Purol brand is a U. S. Motor specification gasoline, while

Third Pump Helps Sales

A LARGE oil company recently experimented with the third pump idea in one of the larger cities of the mid-west.

Results of a seven-day experiment showed that volume on the established grades did not decrease by introduction of a pump selling gasoline on a price basis. The quantity of low priced gasoline sold was 80 per cent of the total of the other two brands. In other words this company increased its sales 80 per cent without dropping any business from established brands.

Purol-Pep, Pure Oil's regular brand, has an anti-knock rating of 68 octane number.

Customers buying low priced gasoline will be accorded the same service as those purchasing other brands. "Service is inherent with the station, not with the gasoline brands," said an Indiana Standard official.

With the Pure Oil Co. the new gasoline is considered a fighting grade to meet today's economic conditions, with some motor car owners wanting to buy on a price basis.

With the Indiana Standard the new gasoline is considered a permanent marketing policy.

An Indiana Standard executive explains its position in these terms: "In effect we have been telling our customers this, 'We have our regular gasoline and our anti-knock, but if you want to buy on price I am sorry but we have nothing to offer you.'"

He continued by using the illustration that a men's furnishing store, as an example, does not confine itself to a limited range of prices on neckties, but offers a variety of merchandise at prices to fit the customer's pocketbook.

In establishing the retail price for Stanolind Blue, a normal market, two cents below that for Red Crown gasoline, will be set up for each marketing point. This policy brings Stanolind Blue 2 cents below Red Crown, and 5 cents below Ethyl gasoline.

Local price changes by the Indiana Standard fluctuate from the normal market established at that point for that brand. General price changes over the entire territory are revisions of the normal established market.

The first announcement carried the name "Standard Blue" for the new low priced gasoline, but this subsequently was changed to "Stanolind Blue." Thus the Indiana Standard now has a red, white, and blue colored gasoline.

Pure Oil at present is not coloring its Purol grade.

In the Mid-Continent field refiners marketing into the Indiana Standard territory were speculating late this week as to the effect of the new brands. Some contracts with jobbers have been based on the service station price, and the tendency this year was in this direction.

Some talk was heard that jobbers would demand invoices based on Stanolind Blue prices, but investigation disclosed that the majority of the contracts specified the price on Red Crown gasoline.

A third gasoline grade with a price appeal may be one of the solutions to the refiner's problem of disposing of his lower grade gasoline. Improvements in automobile engines and motor fuels have increased the market for better gasolines, leaving the lower grades with a decreasing demand.

Market reports in Platt's Oilgram Saturday indicated a quickened interest in napthas.

Down Goes the Price

STANOLIND BLUE GASOLINE

9 cents *plus tax*

After intensive study of present conditions, the Standard Oil Company (Indiana) has decided to market a new and lower priced gasoline, in addition to its established brands.

To meet the demand from those who measure gasoline value by the price per gallon, we are introducing

Stanolind Blue Gasoline

9 cents *(plus tax)*

(As a means of identification it will be colored blue)

Stanolind Blue is a clean, sweet gasoline. It is carefully refined, full powered, and will give full value for the price.

We also announce that improvements have been made in our famous

Red Crown Gasoline

11 cents *(plus tax)*

For more than thirty years Red Crown has been the measure by which other gasolines were judged. It always has been a fast, completely refined gasoline. Now it is being further improved both as to volatility and in anti-knock rating.

To that large and constantly increasing number of drivers who insist that their cars must run smoothly and quietly, under every and all conditions we recommend

Red Crown Ethyl Gasoline

14 cents *(plus tax)*

This we believe is without question the finest motor fuel made. It has every characteristic demanded by the most discriminating motorist—quick action, flexibility, abundant power, and it knocks out that knock. It is necessary and unequaled for use in high compression engines.

Today's Price in Chicago

Stanolind Blue Gasoline - - 9 cents per gallon
Red Crown Gasoline - - - 11 cents per gallon
Red Crown Ethyl Gasoline - 14 cents per gallon
Plus Illinois State Tax 3 cents per gallon

Standard Oil Company, 910 So. Michigan Ave., Chicago, Ill.
(Indiana)

This newspaper advertisement introduced Stanolind Blue gasoline by the Standard Oil Co. of Indiana to Chicago consumers

Standard of Indiana Quantity Discount Agreement Schedule

To Resellers	To Consumers
Discount off service station	Discount off tank wagon schedule
	Quantities of 1000 gallons or more a month from tank wagon

In Chicago

Ethyl 4 cents	Ethyl 4 cents
Red Crown 3½ cents	Red Crown 3½ cents
Stanolind Blue 2 cents	Stanolind Blue 2 cents

Rest of Territory

Ethyl 3 cents	Ethyl 3 cents
Red Crown 2½ cents	Red Crown 2½ cents
Stanolind Blue 1 cent	Stanolind Blue 1 cent

The Editors' Viewpoint

Oil States to Take A More Active Role

THE governments of the principal oil producing states may be expected to take an active hand in the affairs of the oil industry from now on.

Taken together, they constitute a third agency for the oil industry to consider, in addition to the federal government and its own organized effort, through its own associations, to study economic conditions and suggest remedies.

This new agent, the governments of the oil states as a unit, will undoubtedly go over a good deal of the thinking on oil economics which the industry and the Federal Oil Conservation Board, as an agent of the national government, have already done.

However, it has already made considerable progress towards having a hand in the conduct of the oil business, as is evidenced by the program or platform it presented at Washington recently, which received the endorsement of both the President and the federal oil board.

The oil states, through their present Oil States Advisory Committee, propose three objects. First, that the federal oil board continue, in its capacity as a fact finding agency, to report periodically on oil supply and demand to the central agency of the oil states. This agency will recommend to the state conservation authorities in the individual states that the federal board's report be taken as a guide to supply and demand in regulatory efforts in the individual states.

Second, the Oil States Advisory Committee proposes to work in each of the principal oil producing states for a formal interstate compact endorsed by Congress.

Third, the oil states' committee proposes that, pending the working out of such a compact, it go ahead and do now the things that would come within the province of an interstate compact; namely that it suggest to the present state conservation agencies the degree of regulation of production to be followed in each state to ensure stability to the general oil producing business.

It seems likely that this interstate committee is going to prove a strong factor in the oil producing business. It is the organized agent of a number of states, each of which has a very direct interest in oil production, which the average man in the industry does not appreciate. Robert R. Penn, an oil operator in Texas, and the representative on the Oil States Advisory Committee, not of the oil companies in Texas, but of the state government, said at the hearing in Washington before the federal oil board last week, that the revenue of his state in 1931 from the tax on crude production would be about $5,000,000. Last year it was nearly $12,000,000 and the year before about $15,000,000.

Most of this loss of several millions in state revenue, for which schools, universities and and other state institutions must suffer, is a result of the present low price of crude.

The same thing is true in Oklahoma and California, and in other oil producing states to lesser degree. Aside from this direct loss in revenue, industry generally in these states suffers when the price of oil is down and prospers when it is up.

With a natural resource over which the state without question holds the power of regulation to prevent waste, and as vital to the interests of the state as is oil production, it seems logical that these state governments are going to take measures to ensure orderly conduct of the oil production business in these states.

Through an interstate commission such as is proposed, these state regulatory efforts are going to be more effective than in the case of each individual state working by itself, as in the past.

The main thing to keep in mind, however, is that the oil producing industry faces an increasing degree of control by the state, and in a constructive manner, we believe.—V. B. G.

All May Contribute To Drake Well Fund

A PLAN is under way to preserve as a perpetual memorial the site of the first petroleum well. It is a praiseworthy effort and should receive the wholehearted support of our industry. It means the preservation of the institution around which center most of the early traditions of the oil industry.

The plan involves the protection of this old well site at Titusville, Pa., from the erosive action of Oil Creek, the acquisition of land for a small park, and the building of a keeper's cottage and museum for the display of relics of the early petroleum days.

The project has been indorsed by the American Petroleum Institute but the institute directors feel it is not within the institute's scope of functions to finance the work. The directors believe financing should be left to the industry as a whole and every man in the industry given an opportunity to subscribe to a fund to put the park in good shape.

The citizens of Titusville and the former citizens who have gone into other oil fields, are acquiring the land for the park. The city of Titusville and Venango county, Pa., will pave the

road to the well, and the state of Pennsylvania will maintain the park after it is prepared by the industry.

The industry must raise a fund of $60,000 or more. This should not be difficult if every oil man will contribute his mite to the cause. Subscriptions may be small if any oil man feels he cannot afford at this time to give more than a dollar or a few dollars toward the fund, but no limit is set on the size of any subscription. All contributions should be sent to the institute.

The project is worthy of the concerted effort of the entire industry. Many men have already given unstintingly of their time and energy. The backers now ask only that other oil men throughout the country contribute a small sum as a mark of appreciation for the opportunities the petroleum industry has afforded them and for the man whose persistence in the face of many adversities gave birth to our industry.

In this issue is published a more detailed description of what is to be done to preserve the site of the Drake well. Also there is a coupon which may be used in sending money or a subscription to the Drake Well Fund. Use the coupon and the earlier you send in your contribution the more quickly the shrine of petroleum may be permanently established.

Lincoln Votes to Retain Municipal Station

LINCOLN, Neb., April 11.—Lincoln voted 10,755 to 5127 to retain its municipal gasoline station at the election April 7, according to C. M. Sutherland secretary of the Nebraska Independent Oil Men's Association. In 1924 the charter amendment enabling the city to go into the gasoline and motor oil business was adopted 10,261 to 8329.

Lincoln oil men, as a result of the April 7 vote, are planning to get municipal marketing extended to milk, ice, groceries and other commodities. They also will try to have the city pay rent into the city's general fund for the station property, and sell to other city departments at cost. At present city departments pay the same prices as the public for gasoline and motor oils. The profit is put into a reserve fund which can be used only for support of the municipal station.

The attempt of Governor Bryan to extend the right to sell gasoline and oils to all cities and villages of Nebraska apparently is dead for this year. An enabling bill was indefinitely postponed more than a month ago by the legislature and no effort has been made to resurrect it. The legislature adjourns next week.

Daly Resigns as President Of Shell Petroleum

(By Telegraph)

ST. LOUIS, April 15.—U. de B. Daly April 14 announced his resignation as president of the Shell Petroleum Corp. and as a director and member of the executive committee of the Shell Union Oil Corp. The resignation is effective at once.

Mr. Daly has been associated with the Shell interests since leaving the British army at the close of the war. He came to St. Louis in 1926 as vice president of the then Roxana Petroleum Corp. and was made president in September, 1928.

No successor has been announced by the company and Mr. Daly has not yet made public his future plans.

Deep Sand Found In N. Texas

(By Telegraph)

HOUSTON, April 13.—Discovery of deep oil in the greater Wichita Falls district of Texas became a reality when the Deep Oil Development Co.'s No. 1 Munger in southwestern Wichita County began flowing 450 barrels daily April 12, after a shot in 18 feet of saturated lime at a total depth of 3942 feet.

Flow was through cavings bridged in the hole at 3740 feet, thereby indicating a much larger well under cleaned out conditions. Four other deep tests are drilling in the general territory where earlier production has been from upper sand levels.

The Munger well is specifically located 330 feet out of the northwest corner of Block 30 of the Kemp-Wichita valley land subdivision two miles north of Kemp city.

McKee to Build 2000-Bbl. Refinery in Germany

CLEVELAND, April 14.—Arthur G. McKee & Co., engineers and contractors, with headquarters here, have received a contract for construction of a complete 2000-barrel refinery, including crude and rerun stills and a Universal Oil Products Co. Dubbs cracking unit, near Hanover, Germany for Elwerath Gewerkschaft. This complete refinery will cost over $1,000,000

This plant, to be erected on state-owned lands on the canal banks at Misburg, will be the first large refinery built in Germany for reducing and cracking crude oil for the production of gasoline and other commercial refined oil products.

The refinery will operate on crudes produced from properties owned by the Preussag and Elwerath companies in the Nienhagen and Eddessa German oil fields.

Officials of the McKee company state that, while the Nienhagen crude can be charged directly into the cracking unit for the production of gasoline, to obtain a maximum yield of gasoline from the Eddessa crude it must be first processed in reducing stills before any charges can be made to the cracking unit.

Engineering work on this project will be started immediately at the McKee company's Cleveland office and forces will be sent shortly to Germany to commence construction work.

Oil States Stabilization Program Approved at Washington

By V. B. Guthrie
N. P. N. MANAGING EDITOR

WASHINGTON, April 10 STRENGTHENED by the approval of their plans for stabilization of the oil industry by President Hoover and the Federal Oil Conservation Board, the Oil States Advisory Committee now proposes to take its program direct to the oil companies.

Cicero I. Murray, Oklahoma's representative and chairman of the committee of representatives of the governors of oil producing states, announced today the committee will meet in St. Louis, April 14.

It will spend that day in finally drafting its program of immediate activity and then, according to Mr. Murray, will start at once to approach the executives of the principal oil companies, asking them to bring their operations into line with its recommendations in the interests of stabilization and conservation.

Many of the oil company executives will be in St. Louis next week attending the meeting of the refining division of the American Petroleum Institute.

One important part of the institute's program is the consideration of the report of the federal oil board's sub-committee on supply and demand of crude petroleum and gasoline for the coming six months from April 1, which is itself concerned with the stabilization of the industry.

The Oil States Advisory Committee is the latest organized effort to work for the relief of the industry from overproduction of crude, or the threat of overproduction from new flush fields of high potential production. It represents the interests of the oil producing states themselves in oil production. Its members are appointed direct by the governors and are not all oil men.

The committee came into being through a conference between Governor Murray, of Oklahoma, and Governor Sterling, of Texas, in Fort Worth a few weeks ago. It now includes representatives of ten states: Oklahoma, Texas, Kansas, Louisiana and Arkansas, in the southwest; California, New Mexico, Wyoming, Colorado, and Ohio. Ohio came into the committee just in time to send its representative to Washington for this meeting.

The committee's program, submitted in Washington today, consisted of three recommendations and is considerably modified from the program first announced at the close of one of the early meetings of the committee in Texarkana. All reference to prices was eliminated from the recommendations made public here, whereas earlier the committee of oil states governors' representatives had brought up the advisability of some such interstate board suggesting a price for crude which would allow the operators of the wells in settled fields to produce their properties without loss.

THE three present recommendations of the advisory committee are:

"I. That the Federal Oil Conservation Board continue its Voluntary Committee on Economics, to make periodic examinations into the status of the oil industry and formulate national and regional forecasts of supply and demand, and that such forecasts be given due consideration by the interstate committee and recommended, with any necessary modifications, to the respective state conservation bodies.

"II. That the legislature of each oil producing state be requested as rapidly as possible to authorize negotiation of an interstate agreement for co-ordination of conservation measures, any such agreement being subject to ratification by the states.

"III. That pending the working out of such a compact, an advisory committee, representing the several oil producing states, continue to function as a liaison and fact finding body, to present to the conservation authorities of the various states, at such times as may be deemed necessary, recommendations for more effective co-operation as between the states."

AFTER a session of about an hour and a half with the four cabinet officers, who are members of the Federal Oil Conservation Board, Secretary of the Interior Wilbur, chairman of the board, told the oil states' representatives that their program had the full approval of the board.

"The board is ready to approve the plan of the advisory committee and to give it all the help possible," stated Secretary Wilbur. He urged that the industry take advantage of every means to co-operate to bring about stability in the industry.

The afternoon of the same day the advisory committee went to the White House to meet the president. After this conference, Chairman Murray stated that the President had asked for a statement of the committee's program and that, after its presentation informally, but in about the same way as it was given at the federal oil board hearing, the President had stated the program had his approval.

He said his committee would

proceed at once to work for the same ends as it hopes to see accomplished later through the formal medium of an interstate compact approved by Congress, namely to present to the conservation authorities of the various states recommendations for a greater degree of co-operation between the oil producing states in the production of crude to meet current demand.

QUESTIONED as to what attitude the committee would take towards the new East Texas fields, where local operators are now making an effort to have proration set aside, Murray stated that situation gave the governors' representatives no concern and would be dealt with in due time.

He also said that his committee would have its own report prepared as to oil production and demand for 1931, which means that the industry will have three such reports for its guidance, that of the Voluntary Committee on Petroleum Economics of the Federal Oil Conservation Board, that of a special committee of the American Petroleum Institute and that of the committee of governors' representatives.

The hearing before the federal oil board at Washington the 9th was before its full membership, Secretary of the Interior Wilbur, Secretary of War Hurley, Secretary of the Navy Adams and Secretary of Commerce Lamont. At its opening Secretary Wilbur, presiding, said that the hearing had been asked by the oil states committee, but that there would be no limitation of pertinent matters which might be presented by others, since the board was deeply concerned with the need for stabilization in the oil business at the present time.

He asked Chairman Murray to present the advisory committee's program, the specific recommendations in which have been published above. The remainder of Murray's statement was brief and consisted of the committee's objectives, which were summed up as follows:

"The above objectives, i.e. sound and uniform conservation laws within the various states, co-ordination of their enforcement and effect with those of other states, balancing of their joint effect against foreign production, all under a system which will be stable for sufficiently long periods to enable economic production expenditures but flexible enough to meet changing conditions, may and should be placed on a permanent basis by means of an agreement between the oil producing states, which will retain for each state its own administration of its own resources but will guarantee harmonious administration and co-operation through an interstate advisory board."

Next Robert R. Penn, Texas producer, a vice president of the American Petroleum Institute, and representative of Texas on the Oil States Advisory Committee, was called on to present the committee's effort from the point of view of the industry.

He brought up the need for regulation of crude production in view of the discovery the last two or three years of new pools with production possibilities far beyond anything the industry had had to deal with in the past. He named the Yates pool, in West Texas, with an estimated total production of 750,000,000 barrels, the Van pool, in Texas, with an estimated 500,000,000 barrels recovery; the Kettleman Hills pool, in California, which will yield possibly 1,000,000,000 barrels of crude, to say nothing of the Hobbs field, in New Mexico, and the Oklahoma City pool.

HE WENT on to say that this year the industry was called upon to deal with the new East Texas field, possibly the greatest to date in this country, with a reserve of possibly 1,000,000,000 barrels of crude or greater, and told of the difficulties the industry and Texas state authorities are having to bring about orderly development of this area.

Mr. Penn dwelt upon the direct interest of the oil producing states in the stability of the oil producing industry in view of the revenue the state receives through its taxes on production. In Texas, said Mr. Penn, the 1931 revenue from the state tax on production will bring in only $5,000,000 to the state's revenue, through present low prices for crude, as compared with $11,800,000 for 1930 and $15,000,000 in 1929. These figures do not include receipts from the state gasoline tax.

He stated the same situation existed in Oklahoma and California and meant that those states would be forced to borrow on a large scale to meet current operating expenses and that state university and school funds would suffer as a result. He said that revenues to the federal government would suffer through decreased income taxes oil companies will pay on their operations for this year.

AT THE conclusion of Mr. Penn's address, Chairman Wilbur asked for the views of others on pertinent matters having to do with present conditions in the oil industry. James A. Veasey, general counsel for the Carter Oil Co., Tulsa, rose to urge approval by the oil board and the industry as well of the oil states committee's program.

Failure to use every means to remedy present conditions will mean, he said, that 25 or 30 strong oil companies will eventually survive. Specifically, he tendered the services of the special committee of the minerals section of the American Bar Association, of which he is a member, which has studied the matter of an interstate compact, such as is advocated by the oil states committee.

Present at the meeting as representing the Oil States Advisory Committee were Chairman Murray, who is a lawyer and newspaper publisher in Oklahoma; Wm. H. Cooley, oil man, representing California; Mr. Penn, oil man, representing Texas; W. Scott Heywood, oil man, representing Louisiana; Van S. Welch, oil man, New Mexico; Alfred M. Landon, oil man, Kansas; Carl M. Cox, commissioner of public lands, Wyoming; I. C. Grimm, oil man, Ohio; Warwick M. Downing, attorney, Colorado. T. H. Barton, president Lion Oil & Refining Co., El Dorado, representative from Arkansas, was ill and unable to attend the Washington hearing.

It was announced by Chairman Murray that Thurman Hill, state official of Kansas, takes the place on the committee of Mr. Landon.

State Moves to Prorate East Texas Except Enjoined Properties

By Telegraph

HOUSTON, April 14

ADVISED by the Texas attorney general's office April 13 that the temporary injunction obtained in court at Austin last week against putting the new East Texas oil fields under proration, applied only to the properties in which those bringing the injunction were directly interested, the state railroad commission is proceeding with plans to enforce its earlier curtailment order.

It may be made effective within the next four or five days.

This order, issued April 10 by the commission, the state's regulatory agent, placed the maximum allowable output for East Texas at 90,000 barrels daily. Production there, uncontrolled, reached 175,000 barrels daily early in April.

R. D. Parker, chief supervisor of the commission's oil and gas division, said that this proration allowable may have to be increased due to additional completions and changed conditions in the territory.

Under the construction placed on the injunction by Assistant Attorney General Fred Upchurch, only three tracts embracing 72 acres are affected by the pending court proceedings, instead of the nearly 100,000 acres estimated capable of oil production in the general East Texas district.

When Carl Estes, leader of the anti-prorationists, obtained his injunction in Judge Moore's court at Austin last week, his counsel, former governor Dan Moody, filed his brief in behalf of Estes and all others similarly situated. The attorney general's office held, however, that the injunction could not be construed to apply to all the operators and lease royalty owners.

The anti-prorationists in East Texas, through State Senator Pollard, of Tyler, in the East Texas district, have telegraphed the Federal Trade Commission, the U. S. Attorney General, the Interstate Commerce Commission, and finally President Hoover asking for government investigation of conditions in East Texas.

They charge discrimination in tank car allotments in the new fields there, alleging efforts to deny the small producers proper transportation facilities for their oil. They contend this has paralyzed their market and forced crude oil sales at very low prices to brokers who in turn resell it to concerns that can get tank cars to move it.

The major oil companies have so far not entered the East Texas fields as purchasers, handling their own controlled oil exclusively in their tank car shipments. Independent purchasers have moved all the oil so far taken out by others than owners of controlled production.

Before securing the ruling of the state attorney general's office that the anti-prorationists' injunction applied only to the three specific properties, the Texas Railroad Commission had planned to bring about ratable takings of oil from the new fields under the new common purchaser pipeline law.

Under this law the commission has authority to regulate production and takings of oil from a field to prevent water encroachment and also to conserve gas energy.

Meetings were called for Longview and Henderson, in Gregg and Rusk counties, respectively, April 11, to organize field committees of operators "which would advise with the railroad commission in connection with the conservation of oil and gas, and the pipeline law, commonly known as the common purchaser act."

Former Governor Moody, counsel for Estes, demanded the hearing on permanent injunction against proration should be by jury trial. This would delay the hearing until May 4, unless otherwise worked out by compromise or agreement.

Defense counsel has agreed not to move for dissolving the temporary injunction, as that would take as much time as required to get the case to trial on its merits. Meantime, enforcement of the common purchaser act was considered an alternate expedient to the same result, bringing East Texas under proration.

Salt Water Indicates Kilgore Pool Edge

By Telegraph

HOUSTON, April 13.—After Magnolia Petroleum Co.'s No. 1 Florey test, in the Kilgore area of the Sabine Uplift region, had been completed for 700 barrels the first hour, it began making salt water, and April 13 had reached a 60 per cent flow of brine. It is a west offset to the Burton drilling syndicate's earlier No. 1 Florey, which also showed 15 per cent salt water after the Magnolia well encroachment.

Appearance of brine in the two wells delimits the Kilgore area of the general district to a width of three and a half to four miles. The Magnolia well had surface elevation of 330 feet and was drilled to a total depth of 3656 feet. The water level in this part of the district is therefore shown to be 3326 feet below sea level.

Comparison with western outpost wells in the Joiner and Lathrop areas of Rusk and Gregg counties, respectively, indicates that these also are near the safe productive limits of the district in that direction.

East Texas Crude 19 Cents a Barrel At Rusk County Wells

HOUSTON, April 11

THE chaotic character of the East Texas crude oil price situation is indicated by reports of sales at 15 cents a barrel at Rusk county wells.

Independent buyers, who are shipping all the purchased oil moving from the Sabine Uplift district, have in some instances made "spot" or contract arrangements for crude at 19 cents a barrel. No sales could be confirmed, however, at lower prices.

Gulf Coast Pipe Line Co., a Moody-Seagraves interest, was taking crude from the Pioneer Oil Co.'s Tolliver property in Rusk county at 19 cents; and reports were current of others dropping their prices to similar levels.

Earlier in the week, the Petroleum Marketing Co., which supplies crude to the Warner-Quinlan Oil Co., and the Panola Pipe Line Co., which handles shipments for account of H. L. Hunt and others, had set a 25-cent price. At that time, the Sinclair interests had dropped their day-to-day buying price to 30 cents a barrel.

Neither the Sinclair, Humble or Gulf Companies post a price in the district. Sinclair announces what it will pay for crude from time to time and makes "spot" purchases or contracts. Humble has been paying its royalties on a 40-cent a barrel basis and Gulf is reported making somewhat lower settlements.

Magnolia Petroleum Co.'s recent posting of the Mid-Continent schedule of 40 to 67 cents had no effect in establishing a field price, as it has been making no purchases. Its royalties, of course, would be paid on such a basis.

The Magnolia's outgoing line capacity is reported contracted to others, except for such part as may be needed to handle its own production. Neither the Gulf nor The Texas Companies have completed pipelines into the territory; besides the Gulf has always maintained it operated pipelines only for its own account and that it is not a common purchaser.

Humble continues making tank car shipments of crude to itself and the Standard Oil Co. of Louisiana; so far failing to flange up a pipeline connection with its Van-to-Louisiana trunk, which bisects the district.

Sinclair may be expected to begin regular postings when the pipeline construction program of the Sinclair Texas Pipe Line Co., is completed for approximately 100 miles from the Rusk area to Mexia shortly. Announcement was made in New York, April 10, that through favorable joint tariff arrangements with Prairie Pipe Line Co., the Sinclair interests would be able to move 60,000 barrels daily from East Texas to their northern or Gulf Coast refineries, or both.

A Sinclair-owned 12-inch line will be built to Mexia, where the Prairie's system has been in existence since its acquisition of the Pure Oil Pipe Line Co., as a wholly-owned subsidiary subsequent to Mexia-Powell development.

Tank car shipments, unless handled by Independent buyers, originate with producing companies maintaining their own short pipelines to railroad loading racks. Such shipments are moving mainly to the Gulf Coast, in the Houston-Port Arthur districts, or, in the case of the Chalmette Refining Co., to the New Orleans district.

Northern shipments include movements to the British American Oil Co., at Toronto; the White Star Refining Co., at Detroit; the Lubrite Refining Co., at St. Louis; and now perhaps elsewhere.

Latest available statistics on destinations of East Texas tank car shipments show that April 1, an average of 127,325 barrels daily was moving to the various consignees.

The Sabine uplift region producing situation is being aggravated daily by completion of additional wells for which there is currently no crude outlet. Last week's completions totaled 48 in the three areas making up the general district.

The most important new well was the Selby Oil & Gas Co.'s No. 1 Snavely, which extended the Gregg County area upwards of six miles west from the Lathrop discovery, gauging 720 barrels the first hour and making more than 900 barrels the second hour.

Ward Oil Co.'s No. 1 Thrash, in the Rusk County south end district, appeared to connect up the Joiner and Kilgore areas in the inferred solid producing territory extending 30 miles south from Gregg County development and an average width exceeding five miles.

The Thrash well is one mile west of an earlier Joiner area outpost completion and approximately three miles northwest of the main south end group. It was pinched to 450 barrels daily through 1/32 inch choker.

A one-day production mark exceeding 211,000 barrels was reported in field data for the general district. That level of production, however, was not being maintained for lack of crude outlet.

Simms Oil Co. Surveys

HOUSTON, April 11.—Preliminary survey for a 130-mile pipeline from the Lathrop area of Gregg county, East Texas, to its Dallas refinery, has been made by the Simms Oil Co., according to President Edward T. Moore. Whether the line will be built is for future decision, he said; but if constructed it will be either of 6-inch or 8-inch size, with capacity of 15,000 to 20,000 barrels daily.

Billion and Half Barrels Minimum Set Up for East Texas Total

By Paul Wagner

N. P. N. STAFF WRITER

LONGVIEW, April 9

ESTIMATES of ultimate yields from the new East Texas oil district along the west flank of the regional Sabine Uplift range from one billion, five hundred million barrels to two billion, five hundred million barrels of light gravity, gasoline crude.

The daily rate at which this oil will come above ground for the present depends on market demand and the success of proration, ordered for April 10 by the Railroad Commission of Texas at 90,000 barrels; and increasing progressively under state orders to 130,000 barrels, July 1.

Production reached to 175,000 barrels daily[1], early in April, and will go higher unless proration proves effective.

Current conditions affecting both development and proration will be discussed elsewhere in this periodical from time to time; the present analysis is intended to deal with the scope of productive territory, underground conditions and inferred recoveries, on the basis of data so far disclosed by the completion of nearly 150 wells.

The conviction grows among East Texas operators that the Comanchean Cretaceous shoreline of the regional uplift will prove continuously productive over a district 30 miles long, north- south, in Gregg and Rusk counties; and upwards of five miles wide, east-west, extending from Gregg county into Smith and Upshur, and from Rusk into Smith.

At the south end, the Joiner district of Rusk county was carried into Smith for a width of nearly six miles by the Guy V. Lewis No. 1 Cook well[2]; and in the north end, Gregg county, the Lathrop area was widened to nearly seven miles by the Snavely well of Selby Oil & Gas Co., near Gladewater.[3]

Conditions found down-dip from the old shoreline, in Rusk and Gregg counties, have indicated the thickening of the Bingen series sands, known as the Tokio and Woodbine, toward the East Texas embayment on the west; in some cases to as much as 100 feet of oil productive zone.

Failures drilled into salt water in Upshur and Smith counties, have been to far down the flank of the regional structure to show where the occurrence of brine delimits the productive area on the west; but this is beyond the Snavely and Cook wells.

As drilling proceeds in the north-south proved stretch, 30 miles from the Lathrop area past Kilgore development to the Joiner, the continuous character of productive ground through the district becomes increasingly convincing.

On the foregoing basis, it is possible to fairly accurately estimate minimum productive ground totaling 150 square

[1] National Petroleum News, April 8, 1931.

[2] National Petroleum News, page 34, April 1, 1931.

[3] National Petroleum News, April 8, 1931.

Stock promoters run buses from Dallas to the East Texas fields, in some cases a drive of more than four hours, to show the would-be investors the tall derricks. This is a scene on the Tyler-Henderson highway, southeast of Arp, in Smith county. The high pressure work is done in the tent shown in the right of the picture

East Texans turn out to see oil wells completed in the Sabine Uplift region. This picture shows the crowd assembled at the Guy V. Lewis No. 1 Cook, which extended the Joiner fields from Rusk into Smith county and gave the district a width of five miles at its south end. The well later made 137 barrels in 30 minutes through three-quarter inch choker

miles, or 96,000 acres, which allowed 15,000 barrels average acreage recovery would ultimately yield one billion, 440 million barrels, the writer's present estimate.

There will be others who will take issue with these figures, describing them as too low, but the writer has always preferred to err on the side of conservatism, since any estimates made at present must be broadly termed guesses; notwithstanding, they are based on known data and for practical application may be considered workably accurate.

The best production in the Sabine Uplift district will be found so out of proportion to 15,000 barrels per acre recovery as to appear ridiculous. On the other hand, that eastern part of the area where producing sands pinch out against the shoreline will be found thin, lenticular and "lean" in recoveries.

There probably will be found also in the area "high spots" of the Georgetown limestone, which underlies the Tokio-Woodbine divisions of the Bingen series beds; these serving to thin the occurrence of sands thereon. Compensating for them, however, will be found re-entrants along the old shoreline where the sands will reach amazing thicknesses as compared with the whole.

In addition, reports are already current in the field of wells near the east limits of the district being drilled into a productive zone of the Georgetown limestone after finding the Tokio or Woodbine pay "lean."

When this was written the accuracy of such statements had not been confirmed by the writer. Parenthetically, however, the Georgetown produces above the more prolific Edwards limestone in the Luling fault zone of southwest Texas and is a possible oil source in the Sabine Uplift region. Estimates herein contained, nevertheless, take no account of recoveries from other than Bingen series beds.

The greatest sand thickness so far recorded in the district was in the Kilgore area, where Humble Oil & Refining Co.'s No. 2 Peterson well took in 101 feet of pay from 3669-3770 feet, showing only thin breaks of shale and stopping without drilling through the sand. The well tested 800 barrels in one hour through 11/16ths inch choker.

A thousand feet east of the Humble-Peterson, a well of Westheimer & Dauble took in 92 feet of sand and produced 2700 barrels in 12 hours through 3/4-inch choker. North of the Humble-Peterson, 4500 feet, the No. 1 Ben Laird of the Magnolia Petroleum Co., made 1040 barrels in one hour through choker at 3575-3590 feet.

South of the Bateman-Crim discovery block, now owned by Humble Oil & Refining Co., in the Kilgore area, a total of 1,500,000 barrels of crude has been taken from the wells of J. W. Olvey, Edwin M. Jones & Houston Oil Co. of Texas, and the Humble on approximately 20 acres, without lowering the bottom hole pressure on the wells. The pressure remains at 800 pounds, according to authoritative information.

Pressure fluctuations in the Joiner area, south of the Kilgore, are now attributed mainly to inability to get oil out of the ground rather than dissipations of propulsive energy.

The greatest sand thickness authoritatively known to have been drilled in the Joiner area was in the Millican and others, No. 1 Mrs. W. B. Thompson well, which took 60 feet from 3647-3707 feet without drilling through the pay. The well came in making 600 barrels in one hour through choker.

Sand thicknesses of 24 feet were taken without drilling through pay in the Mid-Kansas Oil & Gas Co. (Ohio Oil Co.) No. 1 Moores, 250 barrels in six hours through small chokers, producing from 3675-3699 feet; and the George Demontrand and others No. 1 J. A. Birdwell, west of earlier Rusk county production, which filled four 1000-barrel tanks in six hours.

South of the Lathrop discovery, in the Longview area of Gregg county, the Rodden well of Roeser-Pendleton, Inc., & East Texas Refining Co. (Freeman W. Burford and others) took in 47 feet of sand pay at 3575-3632 feet, making 240 barrels an hour, initial production. On the Tenery tract, the Navarro Oil Co. well went through 15 feet of sand to 3603 feet, but still made between 5000 and 6000 barrels, initial production.

Pay records mentioned herein are intended to show representative conditions rather than give details of any considerable number of completions. Thin sand sections do not necessarily mean indifferent wells, as witness the important productiveness of the Navarro completion, yet the greater pay thicknesses down-dip will bring correspondingly higher oil recoveries, except as drilling nears the still undefined water limits of the district on the west.

U. S. Supreme Court Holds Patent Club Did Not Violate Anti-Trust Laws

By A. E. Heiss
N. P. N. WASHINGTON REPRESENTATIVE

By Telegraph
WASHINGTON, April 13

NO MONOPOLY or restriction of competition, in the business of licensing patented cracking processes or in the production of gasoline resulted from the execution of the cracking process agreements, the Supreme Court of the United States today decided in Standard Oil Co. of Indiana et al., appellants vs. United States, on appeal from the Federal Court for the northern district of Illinois.

The bill filed by the government, the court said, should have been dismissed. Therefore the highest court has reversed the decree of the lower court.

This defeat of the government in the anti-trust suit against the primary and secondary defendants in the cracking process matter, was pronounced by Associate Justice Louis D. Brandeis, a so-called progressive. His opinion was the opinion of the whole court except Justice Stone, who did not participate in the decision because, as attorney general, he took part in the preliminary steps leading to the bringing of the suit.

In the whole opinion, 15 printed pages, there is one crumb of comfort for the government. Agreements concerning patented processes are likely, said the court, to engender the evils to which the Sherman anti-trust law is directed. Therefore, it said, it had to examine the evidence to ascertain the operation and effect of the challenged contracts.

The court considered the case under eight heads, most of them interesting only to the lawyers, but in the last three the court decided the matters in issue in such a way as to interest the man who is concerned only with the question whether the members of the so-called cracking patent club are guilty of violating the anti-trust statute.

"No monopoly, or restriction of competition, in the production of either ordinary or cracked gasoline has been provided," said the court in the fifth head. The declaration that no monopoly or restriction of competition in the licensing of patented cracking processes had resulted from the execution of the licensing agreements, was also made in the fifth heading.

Proof of control of gasoline production by reason of the alleged monopoly in cracking processes, the court said, was lacking. The testimony as to production, Justice Brandeis said, was so varient that the master who took the testimony, did not accept it.

"No monopoly, or restriction of competition, in the sale of gasoline has been proved," further said the court. Continuing, it said in part:

"Thus it appears that no monopoly of any kind, or restraint of interstate commerce, has been effected either by means of the contracts or in some other way. In the absence of proof that the primary defendants had such control of the entire industry as would make effective the alleged domination of a part, it is difficult to see how they could by agreeing upon royalty rates control either the price or the supply of gasoline, or otherwise restrain competition.

"By virtue of their patents they had individually the right to determine who should use their respective processes or inventions and what the royalties for such use should be. To warrant an injunction which would invalidate the contracts here in question, and require either new arrangements or settlement of the conflicting claims by litigation, there must be a definite factual showing of illegality."

Justice Brandeis said the government sought no relief against the secondary defendants, conceding that 53 of the 79 contracts of that sort were wholly beyond attack, because the licenses thereunder were issued prior to the making of the three main agreements challenged. As to the remaining contracts between the primary and secondary defendants, the government, the court said, agreed that the decree should be modified to declare that such contracts were voidable at the option of the licensees. That modification, it said, was assented to at the bar by counsel for the primary defendants.

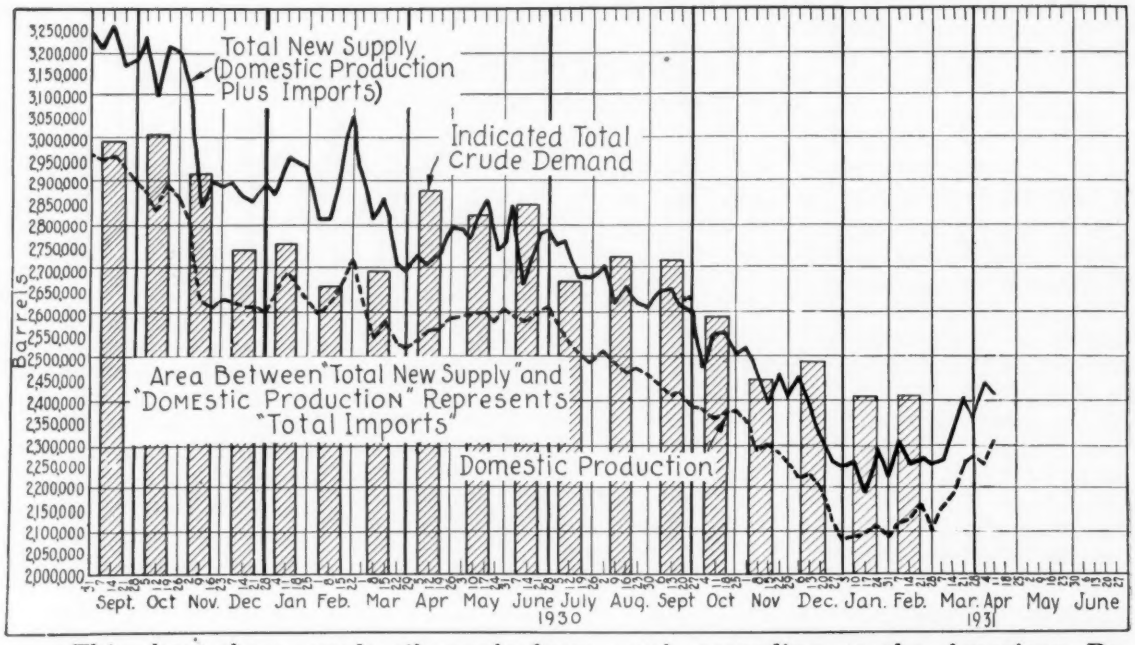
Oil Board Voted $20,000

WASHINGTON, April 14. —When the new government year begins July 1, the Federal Oil Conservation Board will have $20,000 in its pockets to spend, voted it by Congress.

This is the first time the board has had an appropriation since its initial allowance of $50,000, when it was established as a result of a recommendation by President Coolidge in 1925.

The board has borrowed the services of technical men and advisers from other government departments, and even from the industry, and has been able to make its initial appropriation go a long way, in comparison to the way most government bureaus spend money.

Review of Late Production News



This chart shows crude oil supply from week according to the American Petroleum Institute reports (solid line) in relation to indicated crude oil demand as taken from the Bureau of Mines monthly reports (shaded columns).

Oklahoma, Kansas

BECAUSE four hours continuous flow on Oklahoma City field wells for the purpose of arriving at new potential for the field is still in progress, production over the six-day period ended April 10 far exceeded the amount permitted under the proration order now in effect. The average for that period was 166,539 barrels.

Hearing will be held by the state corporation commission soon to determine the market outlet for the field. Request has been made by the field umpire who believes the seasonal demand warrants greater production.

Field operations over the Mid-Continent territory were again without notable feature. Southwest of the Searight pool, Seminole county, a small outlier pool seems to have been opened by the Pierce et al wildcat, in the SW SW SE of 8-9-6. With Wilcox sand from 4228-45 feet, it had produced to the end of the week about 220 barrels in 20 hours, swabbing.

Current production in this country by pools is found on page 89.

Texas, New Mexico, Louisiana

WEST TEXAS returned to the production spotlight when Southern Crude Oil Purchasing Co. found its first oil showing in No. 2 Cowden, northern Ector county, 25 feet higher structurally than the No. 1 well, which several months ago made 275 barrels daily, initial yield, in a hitherto wildcat area. No. 2, in Sec. 34, Block 43, Twp. 1 north, stood 2000 feet of oil in the hole at 4120 feet. It was also producing 7,500,000 cubic feet of sulfur gas from 4045-4050 feet.

In the Joiner area of the Sabine Uplift region, the Ward Oil Co.'s No. 1 E. S. Thrash, one mile west of the McMillan well and three miles north of other south end production, made 1320 barrels the first hour from 3753-3799 feet. It is in the edge of small town of London.

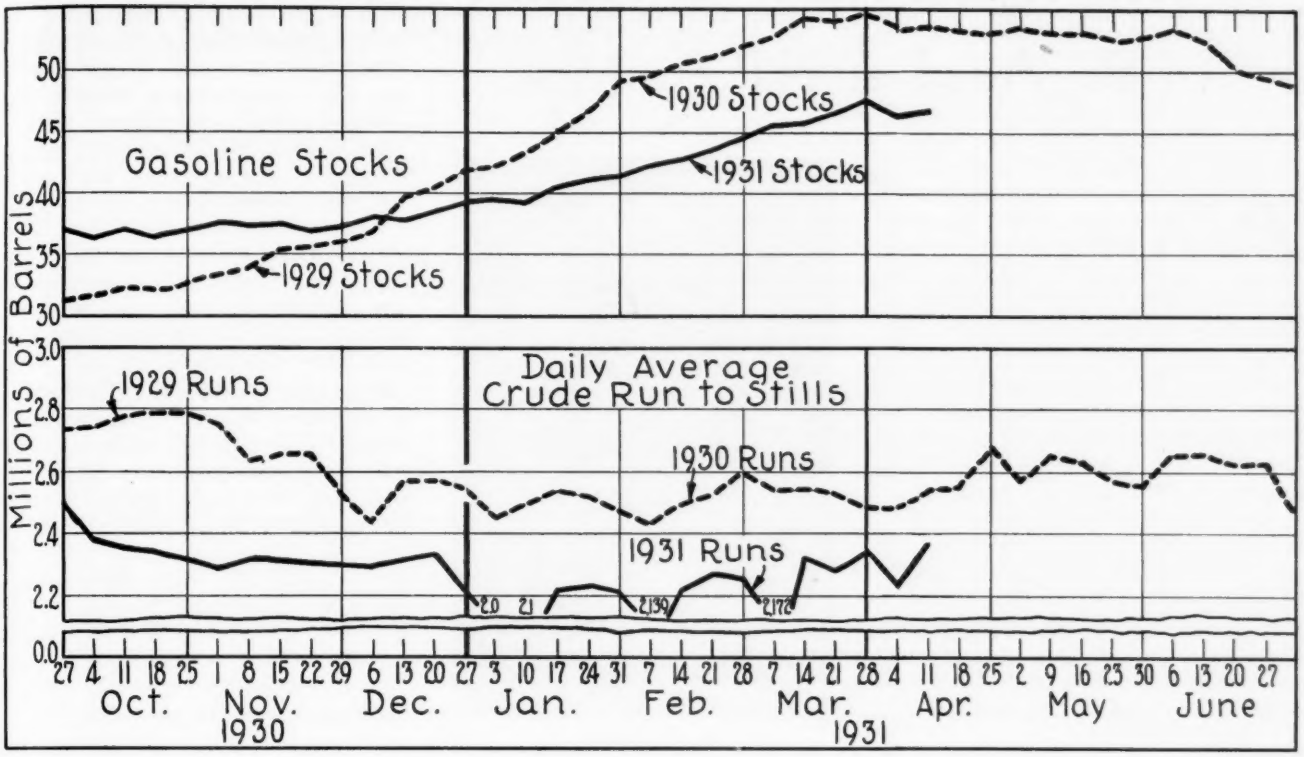
California

CALIFORNIA operators showed keen interest the past week in core-barrel showings of a deep test being drilled by George F. Getty, Inc., in the northwestern end of the Lost Hills field.

Cores taken between 3830 and 3940 feet are reported to have shown good oil sand that reacted favorably to ether and acetone cuts. However, since the hole was taking fluid below the string of 9 inch set at 3768 feet, the crew pumped in 1000 sacks of cement and as the week closed was preparing to drill this plug out.

Failure on the part of numerous small producers in the Playa del Rey field to find a purchaser for their oil has caused many of the producing wells to be shut down entirely and others to be beaned in to actual requirements. Major purchasers have discontinued posting prices for this oil and approximately 20,000 barrels daily is being trucked out of the field to various Los Angeles Basin refineries.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Gasoline Stocks Increase 679,000 Barrels

By Telegraph

NEW YORK, April 11

CRUDE runs to stills were increased 139,300 barrels daily average, and gasoline stocks were up 679,000 barrels at refineries reporting operations for the week ended April 11 to the American Petroleum Institute.

Daily average production of cracked gasoline stood at 454,200 barrels an increase of 30,800 barrels over previous week.

Fuel oil stocks increased by 405,000 barrels.

Crude runs to stills were reduced in the East Coast and Appalachian districts. Other sections processed more crude, with Texas leading by an 108,200 barrel gain. Indiana, Illinois, Kentucky district gained 23,400 barrels daily average. Oklahoma, Kansas, Missouri, 34,700 barrels, and California 18,300 barrels.

All districts excepting Louisiana-Arkansas and Louisiana Gulf Coast reported slight increases in gasoline stocks for the week.

Slight increases in fuel oil stocks were reported also from all districts excepting California and Louisiana Gulf coast.

Refineries were operated at 62.5 per cent of capacity for the week ended April 4, as against 66.4 per cent of capacity for week ended April 11.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Gasoline		Gasoline	Gas & Fuel Oil	Gas & Fuel Oil	Cracked Gasoline Production % of Total Capacity Reporting	Daily Av. Production (Barrels) Week Ended	
		April 11	April 4	April 11	April 4	April 11	April 4	April 11	April 4	April 11	April 11	April 11	April 4
East Coast	100	423,000	470,700	69.0	76.8	9,175	8,931	7,705	7,692	90.3	89,400	77,800	
Appalacian	93.8	87,300	97,600	65.9	73.7	1,897	1,842	1,184	1,162	94.6	18,900	17,400	
Ind., Ill., Ky.	97.5	299,400	276,000	78.6	72.4	6,067	5,878	3,173	3,108	95.2	82,700	72,900	
Okla., Kans., Mo.	89.4	267,400	232,700	64.9	56.5	3,533	3,484	3,748	3,709	90.0	50,000	53,900	
Texas	91.9	599,900	491,700	80.7	66.1	8,101	7,871	8,840	8,339	95.9	126,300	112,700	
La., Ark.	98.3	142,900	141,700	54.5	54.1	1,957	2,081	2,343	2,334	97.7	29,600	35,300	
Rocky Mountain	93.1	56,700	45,200	40.6	32.4	1,923	1,900	832	830	100	14,900	12,000	
California	98.8	494,600	476,300	55.7	53.7	14,104	14,089	99,012	99,259	100	42,400	41,400	
Total	95.7	2,371,200	2,231,900	66.4	62.5	46,750	46,076	126,838	126,433	94.9	454,200	423,400	
Texas (Gulf Coast)	100.0	455,400	377,100	86.0	71.2	6,933	6,759	6,509	6,051	98.5	105,100	92,600	
La. (Gulf Coast)	100.0	87,600	95,000	59.4	64.4	1,782	1,921	1,325	1,346	100.0	21,600	26,300	

Railroad Fight Against Competitors To Be Aired at N.P.A. Meet

CLEVELAND, April 13

ANALYSIS of the supply and demand of crude oil, and of gasoline for the six-months period from April 1 to Sept. 30, 1931, and the interpretation of the effect of these factors on present economic conditions, will be probably the most important topic discussed at the National Petroleum Association convention in Cleveland April 23 and 24.

The controversy between the railroads and their competitors, the bus lines, trucking companies, and air routes will be discussed during one entire session of the meeting, according to the program recently announced by Fayette B. Dow, association counsel.

Three of the most important questions with which the refiner and marketer, are concerned will be answered during the session devoted to the technology and engineering of oil refining. The newer processes which have been developed or brought to the front in refining practice during the last year will be presented by D. G. Brandt of Henry L. Doherty & Co.

The details of the methods of the federal government used in purchasing petroleum products, the reasons for specifications in general and for the specific items included in present and proposed specifications for gasoline lubricants and other products are to be presented in a paper by Dr. H. C. Dickinson, chief of the power division of the Bureau of Standards at Washington.

A great deal of attention has been given the last few years by the association to the relationship between the automotive and petroleum industries. It will be recalled that, at the April, 1930 meeting, a brilliant address was made by Dr. C. F. Kettering, dealing especially with the needs of the motor industry as to fuels and lubricants if the gasoline engine is to compete with modern developments in other types of motors, especially the modified diesel engine.

E. M. Lyons

This year the interdependence of the two industries will be discussed by Dr. H. L. Horning of the Waukesha Motor Co., who is thoroughly qualified to present the subject. Dr. Horning's company has been co-operating with the subcommittee which has been developing the standard knock testing method and apparatus during the last two or three years. Dr. Horning designed the test engine used by the committee which has been revised in minor details since, and the company manufactured the engines now used by the co-operators.

Earl Bartholomew of the Ethyl Gasoline Corp. will discuss in detail the meaning of knock ratings as at present determined and interpreted. The method employed by his company has been several years in development and is universally used by producers and marketers of ethyl gasoline throughout the world. Latest results obtained in determining knock ratings vary somewhat with the new methods, and this paper should prove invaluable in acquainting refiners not in closest touch with developments, with the meaning of knock rating and its methods in 1931.

Probably the most important subject, from the refiners' and marketers' points of view, is that of the economic conditions which they are facing. Presentation of the details of this economic situation will be made by E. B. Swanson, chief economist of the U. S. Bureau of Mines and chairman of the committee on petroleum economics of the Federal Conservation Board.

Program, National Petroleum Assoc. Meeting

Thursday Morning, April 23

Keynote Address, E. M. Lyons, President, National Petroleum Association.

"The Association and its Finances," G. B. Hunter, Treasurer, National Petroleum Association.

"The Automotive and Petroleum Industries," H. L. Horning, President, Waukesha Motor Co.

Thursday Afternoon, April 23

"An Analysis of Crude Oil and Gasoline Supply and Demand for the Period April 1 to Sept. 30, 1931," E. B. Swanson, Chief Economist, United States Bureau of Mines, and chairman of committee on Petroleum economics of the Federal Oil Conservation Board.

"The Oil Industry's Immediate Economic Problems," H. J. Struth, Petroleum Economist.

"The Present and Future of Petroleum Marketing," L. V. Nicholas.

Thursday Evening, April 23

Fellowship Supper at the Midday Club. Fred G. Clark, in charge of entertainment.

Friday Morning, April 24

"Recent Developments in Petroleum Refining," D. G. Brandt, Henry L. Doherty & Co.

"The Anti-Knock Rating of Gasoline," Earl Bartholomew, director of engineering laboratory, Ethyl Gasoline Corp.

"Government Purchase of Petroleum Products on Specifications," H. C. Dickinson, chief, Heat and Power Division, United States Bureau of Standards.

Friday Afternoon, April 24

General Subject: "The Railroads and Their Competitors."

1. The Railroad's Viewpoint, Elisha Lee, vice-president, Pennsylvania Railroad Co.

2. The Shipper's Viewpoint, Willis Crane, traffic attorney, National Petroleum Association.

3. Who Pays for the Construction and Maintenance of the Public Highways? John E. Walker, specialist in taxation.

Petroleum Requirements, April-September, As Reported by Federal Oil Board

THE demand for gasoline during recent months has been influenced particularly by the business depression and unusual weather conditions, the first tending to reduce demand below normal and the second having the opposite effect of raising the level above the usual winter requirements. Insofar as domestic demand for gasoline was concerned, these divergent influences resulted in a trend which was mainly below that of normal expectancy but which, at times, did rise above that of the preceding year.

At the beginning of the April to September period of 1930, the severity of the business depression had not exercised its full force upon the demand for gasoline but did so before the middle of the period was reached. During the latter part of the period, the more favorable influence of a mild fall and winter tended to increase demand above what undoubtedly it would have been during a period of severe weather. Increased activity in snow clearance, stimulating automobile travel, was a further influence towards a larger winter demand for gasoline.

In considering the probable demand for gasoline during the April to September period of the present year, the committee consequently has reached the conclusion that the effects of the business depression would remain as an unfavorable factor during the first two months of the present period and that conditions comparable with those of the preceding year would not be encountered until these first two months had been passed.

The committee also concluded that domestic demand during the final month of the 1930 period was somewhat higher than normally could be expected and, consequently, estimated for September a domestic demand

Summer Domestic Gasoline Demand 1.5% Larger

THE oil industry must adjust its operations for the six months from April to September on the basis of a total gasoline demand of 252,000,000 barrels, a decline of 0.8 per cent from the corresponding period in 1930.

This is the conclusion of the report on oil supply and demand made by the Voluntary Committee on Petroleum Economics at the request of the Federal Oil Conservation Board.

This report, herewith published in full, is being studied this week by the refining division of the American Petroleum Institute at St. Louis. Next week it will be studied by the National Petroleum Association, in session at Cleveland.

Domestic gasoline demand for this period the committee estimates at 222,800,000 barrels, an increase of 1.5 per cent over 1930.

Export gasoline business, however, is expected to show a loss of 5,300,000 barrels, to a total of 29,200,000 barrels for the period.

To meet this gasoline demand the committee suggests production from domestic refineries of 224,140,000 barrels, withdrawal of 17,400,000 barrels from stocks, imports of 6,600,000 barrels, and supply of 3,860,000 barrels from miscellaneous sources.

This withdrawal of stocks would leave the stocks' total at 30,600,000 barrels on Oct. 1, which the committee estimates is safe working stocks.

To produce this volume of domestic gasoline will require 463,434,000 barrels of crude, at the rate of 48.365 per cent gasoline recovery. Total crude demand of 491,434,000 barrels is estimated as required for the six-months period, of which it is estimated 30,000,000 barrels will be imported.

To avoid establishing too high a rate of production over the coming period of high seasonal demand, the committee estimates withdrawals from crude stocks should continue at the rate of 16,082,000 barrels total withdrawal for the period.

This would leave domestic requirements to be met from current production of 445,352,000 barrels, an average daily rate of 2,433,600 barrels. For purposes of comparison, crude production early in April was at the rate of 2,252,100 barrels.

Tables accompanying the report suggest the proportions of this total crude oil supply which should come from the principal producing states. Other tables give indicated refinery operations, by months, by refining districts.

The committee suggests the present report be reviewed July 1 in the light of developments up to that period, and that estimates be extended to cover the rest of 1931.

The Voluntary Committee on Petroleum Economics consists of E. B. Swanson, chief economist, U. S. Bureau of Mines, chairman; John W. Frey, Bureau of Foreign and Domestic Commerce; Martin Van Cuvering, petroleum engineer, Los Angeles; Alfred G. White, National Industrial Conference Board, New York; Howard Bennette, manager, Western Petroleum Refiners Association, Tulsa.

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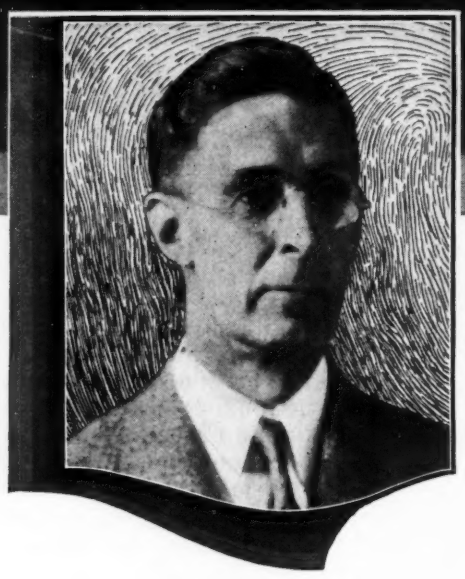

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slightly lower than that recorded for September, 1930. Having taken these divergent tendencies into account, the committee estimates that the domestic demand for gasoline will exceed that of the preceding year during June, July, and August and that April, May, and September domestic demand will not equal the 1930 levels.

Through data courteously furnished by the various State officials concerned with the collection of gasoline taxes, the committee studied the respective trends in gasoline demand in various sections of the country, particularly in comparing local trends with the national average. These local differences were taken into account in preparing the estimates of gasoline production in the different refining areas, but it is suggested that local demand in the area served should receive the particular attention of the individual producer. Trends in automobile registration, cars in use and those replaced, as well as recent data on production, also were reviewed by the committee.

As the final result of this study, domestic demand during the 1931 period is estimated by the committee at 228,800,000 barrels, an increase of 1.5 per cent over the domestic demand of 219,589,000 barrels during the same period of the preceding year.

In the study of probable exports of gasoline to foreign countries, the committee gave particular attention to the increasing ability of foreign countries to supply the needs for motor fuel outside of the United States and to the realignment of world-wide distribution channels, whereby a certain portion of the foreign demand previously supplied from the United States will be met by shipments from producing centers in foreign countries.

Considering the quantities of gasoline entering foreign trade from the major shipping countries, it appears that the United States is losing its relative position in the world gasoline market. Although gasoline exports from the United States increased from 43,300,000 barrels in 1927, to 63,200,000 barrels in 1930, shipments from other major producing countries have been increasing at a more rapid rate.

For a more detailed analysis of this trend, gasoline exports from the United States have been compared with those of the eight other major shipping countries, Netherland West Indies, Netherland East Indies, Russia, Persia, Rumania, Sarawak, Peru, and Trinidad, the countries being listed according to their respective standings as sources of supply.

Gasoline exports from the United States increased 8,417,000 barrels, 8,255,000 barrels, and 3,189,000 barrels during 1928, 1929, and 1930, respectively, compared in each instance with the exports of the preceding year. Compared in a similar way, gasoline exports of the other eight major producing countries increased 6,709,000 barrels in 1928; 13,981,000 barrels in 1929; and 18,727,000 barrels in 1930.

The increase recorded for the United States in 1930 was approximately 5,000,000 barrels less than that for 1929; while the 1930 increase recorded for the other eight countries was approximately 5,000,000 barrels more. Looking at the situation in another way, the United States, as one of the nine major exporters, shipped 62.42 per cent of the total in 1927; 61.21 per cent in 1928; 56.2 per cent in 1929; and 49.1 per cent in 1930.

Another factor of importance in the consideration of probable exports from the United States is the realignment of trade channels in the world gasoline market, whereby quantities of gasoline, comparable with those previously shipped to the United States, will be routed to other countries previously served from this country, thereby reducing, to a corresponding degree, the quantities exported from domestic ports. In addition, the present competitive ability of certain foreign producing countries will result in some reduction in United States exports.

From its consideration of these several factors, the committee estimates that gasoline exports from the United States during the period under consideration will total 29,200,000 barrels, a reduction of approximately 5,300,000 barrels from the comparable 1930 total of 34,519,000 barrels. For purpose of clarification, it is stated that both amounts include shipments of unblended natural gasoline from California ports to foreign countries.

The summation of domestic and foreign requirements indicates that the American oil industry, during the period under consideration, should not anticipate a total motor fuel demand in excess of 252,000,000 barrels, a decline of 0.8 per cent from the comparable 1930 figure of 254,108,000 barrels.

The Gasoline Supply

To meet the estimated total domestic and foreign motor fuel demand of 252,000,000 barrels, the committee anticipates the receipt of 6,600,000 barrels from foreign sources; the withdrawal of 17,400,000 barrels from storage; the supply of 3,860,000 barrels from miscellaneous sources; and the production of 224,140,000 barrels at domestic refineries.

Estimates based upon a careful study of all reliable data available to the committee indicate that receipts of gasoline from foreign refining centers will be reduced from the 9,863,000 barrels received during the 1930 period to approximately 6,600,000 barrels during the six months period of 1931, a decline of 3,263,000 barrels, or 33 per cent.

In the absence of final data, stocks of gasoline held in storage at refineries on April 1 have been calculated to be 48,000,000 barrels. The committee has estimated that an inventory objective of 30,600,000 barrels for stocks on September 30, there-

Table 1

Domestic Crude Oil Requirements April-September, 1931

Producing areas	Estimated crude oil requirements April 1-Sept. 30, 1931 barrels	Daily average April 1-Sept. 30, 1931 barrels	Per cent of total
Texas	162,641,000	888,749	35.25
Oklahoma	113,340,000	619,344	24.56
California	96,624,000	528,000	20.94
All Others	88,829,000	485,404	19.25
Total U. S.	461,434,000	2,521,497	100.00

Table 2

Domestic, Foreign and Total Demand for Motor Fuel,* April-September, 1929, 1930, 1931

(Figures in Thousands of Barrels)

Domestic Demand	April	May	June	July	August	September	Total
1929	32,350	34,677	33,144	37,383	37,981	34,680	210,215
1930	34,380	36,349	35,562	38,185	37,361	37,752	219,589
Change	+6.3	+4.8	+7.3	+2.1	—1.6	+8.9	+4.5
1931 (Estimate)	32,972	35,931	36,399	40,042	40,683	36,773	222,800
Change	+4.1	+1.2	+2.4	+4.9	+8.9	—2.6	+1.5
Exports							
1929	4,640	5,363	5,932	6,152	5,784	4,440	32,311
1930	5,771	5,012	7,322	5,694	6.691	4,029	34,519
Change	+24.4	—6.5	+23.4	—7.4	+15.6	—9.3	+6.8
1931 (Estimate)	4,205	4,850	5,375	5,540	5,230	4,000	†29,200
Change	—27.1	—3.2	—26.6	—2.7	—21.8	—0.7	—15.4
Total Demand							
1929	36,990	40,040	39,076	43,535	43,765	39,120	242,526
1930	40,151	41,361	42,884	43,879	44,052	41,781	254,108
Change	+8.5	+3.3	+9.7	+0.8	+0.7	+6.8	+4.8
1931 (Estimate)	37,177	40,781	41,774	45,582	45,913	40,773	252,000
Change	—7.4	—1.4	—2.6	+3.9	+4.2	—2.4	—0.8

*"Motor Fuel" includes refinery production of gasoline; motor fuel blended at natural gasoline plants, benzol; and unblended natural gasoline shipped to foreign countries from California.

†Includes approximately 2,000,000 barrels of unblended gasoline shipped to foreign countries from California, leaving shipments of approximately 27,200,000 barrels of refined gasoline.

fore, would require a net withdrawal from gasoline stocks of 17,400,000 barrels during the period under consideration. This is comparable with the reduction of 16,986,000 barrels during the same period of 1930.

The September objective of 30,600,000 barrels is somewhat higher than the 27,184,000 barrels which the industry reported to the American Petroleum Institute as adequate for working stocks on the corresponding date of 1930. The increase is based upon the assumption that stocks in certain areas should be slightly higher than was reported; that several new plants will require working stocks; and that a greater demand for certain types of premium motor fuel has resulted in the necessity for a somewhat larger inventory than was adequate in the past.

It is estimated that 3,860,000 barrels will be supplied from miscellaneous sources, (the production of motor fuel at natural gasoline plants, the addition of benzol, and the unblended natural gasoline shipped from California to foreign countries). Subtracting this miscellaneous production from the estimated

Table 3

Motor Fuel Supply, April-September, 1929, 1930, 1931

(Figures in Thousands of Barrels)

1929	April	May	June	July	August	September	Total
Motor Fuel Production	35,016	36,671	35,975	38,198	38,968	37,605	222,433
Imports	822	729	732	934	792	901	4,910
Withdrawals from Storage	—1,152	—2,640	—2,369	—4,403	—4,005	—614	—15,183
Total Supply	36,990	40,040	39,076	43,535	43,765	39,120	242,526
1930							
Motor Fuel Production	38,028	39,204	37,393	37,990	37,772	36,873	227,260
Imports	1,319	1,768	1,670	1,741	1,827	1,538	9,863
Withdrawals from Storage	—804	—389	—3,821	—4,148	—4,453	—3,370	—16,985
Total Supply	40,151	41,361	42,884	43,879	44,052	41,781	254,108
1931 (Estimate)							
Motor Fuel Production	35,892	37,588	36,874	39,154	39,946	38,546	228,000
Imports	1,109	778	1,106	1,136	1,355	1,116	6,600
Withdrawals from Storage	—176	—2,415	—3,794	—5,292	—4,612	—1,111	—17,400
Total Supply	37,177	40,781	41,774	45,582	45,913	40,773	252,000
Gasoline Stocks at Refineries:							
Beginning of month	48,000	47,824	45,409	41,615	36,323	31,711	.....
End of month	47,824	45,409	41,615	36,323	31,711	30,600	.....
Total Motor Fuel Production	35,892	37,588	36,874	39,154	39,946	38,546	228,000
Miscellaneous Blending, etc.	680	675	660	595	630	620	3,860
Refinery Production of Gasoline	35,212	36,913	36,214	38,559	39,316	37,926	224,140

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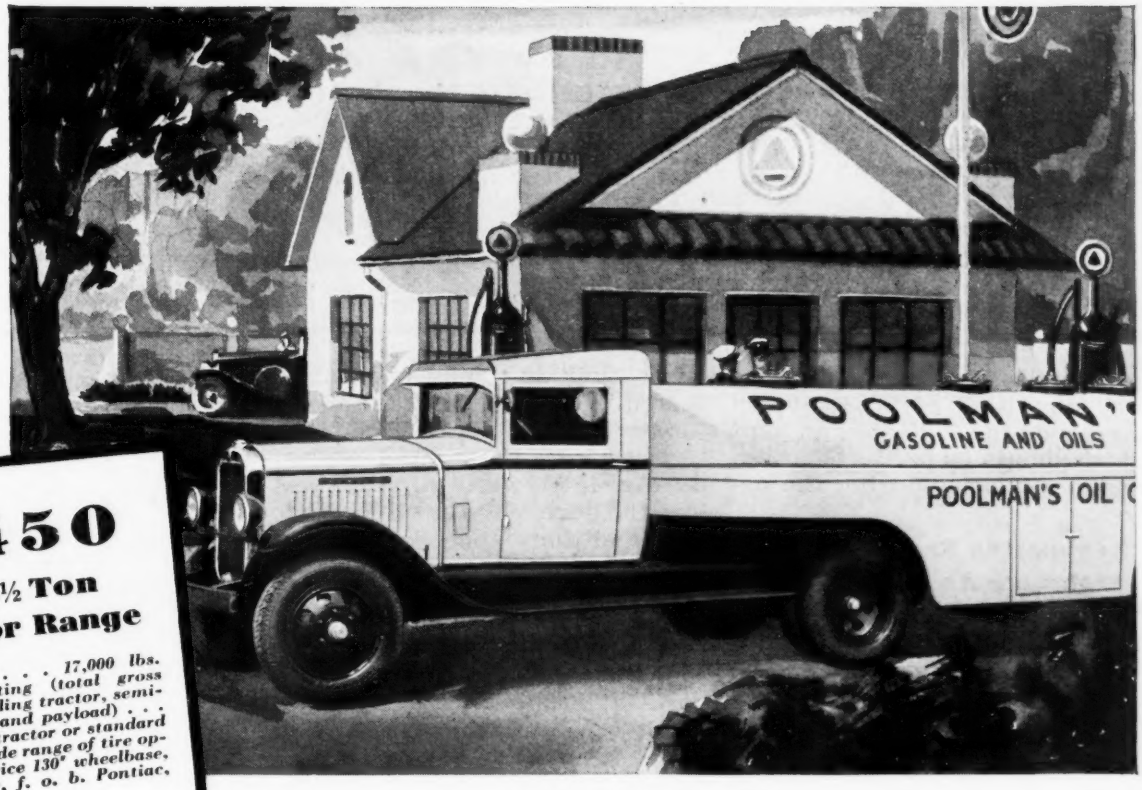

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Table 4

Estimated Crude Oil Requirements, April-September, 1931

(Figures in Thousands of Barrels)

	April	May	June	July	August	September	Total
Crude Run to Stills	72,805	76,322	74,876	79,725	81,290	78,416	463,434
Crude Exports	1,900	2,200	2,000	2,500	2,400	2,000	13,000
Crude Used as Fuel, Losses, etc.	2,460	2,540	2,460	2,540	2,540	2,460	15,000
Total Crude Requirements	77,165	81,062	79,336	84,765	86,230	82,876	491,434
Imports	4,900	5,100	4,900	5,100	5,100	4,900	30,000
Total Domestic Crude Requirements	72,265	75,962	74,436	79,665	81,130	77,976	461,434
Daily Average Domestic Crude Requirements (Barrels)	2,408,800	2,450,400	2,481,200	2,569,800	2,617,100	2,599,200	2,521,500
Stocks Withdrawals Resulting if 2,450,000 Barrels is Established as Maximum Daily Production Rate (Barrels)	.....	12,400	936,000	3,713,800	5,180,100	4,476,000	14,318,300
Stock Withdrawals Resulting if 2,500,000 Barrels is Established as Maximum Daily Production Rate (Barrels)	.....	.....	.....	2,163,800	3,630,100	2,976,000	8,769,900

total production, there remains the quantity of 224,140,000 barrels as the indicated amount which should be produced at domestic refineries during the period.

Crude Oil Requirements

Following a careful analysis of recent trends in gasoline recovery in each of the refining districts, the committee has reached the conclusion that the average production of gasoline, including the natural gasoline blended at refineries, will equal 48.365 per cent of the crude run. This recovery is somewhat higher than the ratio of 46.934 per cent effective during the 1930 period.

This higher production per unit of crude run is expected to result from the increased output of cracked gasoline, occasioned by the greater demand for "anti-knock" motor fuels. Applying the ratio of 48.365 per cent to the estimated refinery production of 224,140,000 barrels, the committee has arrived at the figure of 463,434,000 barrels, as the estimated quantity of crude oil which will be required in the production of the estimated gasoline output.

In addition to the requirements of crude oil for processing, it is estimated that exports will amount to 13,000,000 barrels during the period and that an additional 15,000,000 barrels may be represented in the consumption of crude oil directly as fuel, in crude oil transferred to fuel oil stocks; and in losses in handling. Crude oil exports from the United States during 1930 were slightly below the levels of the preceding year and there appears to be no reason to anticipate any upward trend during the present period, as foreign competition and economic depression in foreign countries will tend to hold exports of crude oil to the 1930 level.

The summation of these separate needs leads to the figure of 491,434,000 barrels as the total estimated crude oil requirement during the period under consideration. Deducting the estimated crude imports of 30,000,000 barrels, there remains the quantity of 461,434,000 barrels as the estimated total requirement of domestic crude oil during the period.

The estimated total requirement of domestic crude oil, 461,434,000 barrels, represents an average daily requirement, during the period, of 2,521,500 barrels. The committee, however, directs attention to its estimate (Table 4) that the average daily requirement will not be reached during the first three months of the period.

After a careful analysis of present trends in the distribution of crude oil from domestic sources, the committee has prepared Table 1, showing the relative portions of the national requirements which would be contributed by the several major producing areas during the period.

Crude Oil Supply

It is obvious that the domestic crude oil requirement of 461,434,000 barrels is obtainable, in some determinable ratio, by current production or by withdrawals from the present storage of oil previously produced.

The preceding Committee on Petroleum Economics, of the federal Oil Conservation Board, in its report of Nov. 6, 1930, favored a reduction of crude oil stocks at the rate of 100,000 barrels daily for an indefinite period, stating that, at such a rate, seven years would be required to cut domestic crude oil stocks in half.

Although it appeared doubtful to that committee that such liquidation could be accomplished during a period of adverse seasonal and cyclical factors, the reduction in field and pipeline domestic crude oil stocks continued at an average daily rate of 87,881 barrels during the period Oct. 1, 1930, to Feb. 28, 1931. The present committee believes that a comparable reduction should be expected during the period now under consideration.

An examination of the estimated monthly trend in domestic crude oil requirements (Table 4) will reveal that, unless some portion is drawn from storage during the latter half

Table 5

Estimated Gasoline Shipments and Production, by Refinery Districts, April 1-September 30, 1931

(Figures in Thousands of Barrels)

Refinery District	Anticipated Shipments	Estimated stocks* Apr. 1, 1931	Anticipated stocks* Sept. 30, 1931	Anticipated change	Indicated gasoline production	Indicated crude throughput	Ratio gasoline to crude
East Coast	39,112	8,436	4,400	— 4,036	35,076	87,690	40.0
Appalachian	9,371	2,053	1,000	— 1,053	8,318	17,698	47.0
Indiana-Ill.-Kentucky	37,371	5,381	4,450	— 931	36,440	62,291	58.5
Oklahoma-Kan.-Mo.	35,482	4,058	2,500	— 1,558	33,924	58,794	57.7
Inland Texas	14,751	1,731	1,600	— 131	14,620	29,240	50.0
Northern La.-Ark.	4,727	187	200	+ 13	4,740	11,286	42.0
Texas Gulf Coast	40,531	5,900	3,050	— 2,850	37,681	78,502	48.0
Louisiana Gulf Coast	11,627	1,939	700	— 1,239	10,388	21,200	49.0
Rocky Mountain	8,269	1,985	1,500	— 485	7,784	12,395	62.8
California	40,299	16,330	11,200	— 5,130	35,169	84,338	41.7
Total United States..	241,540	48,000	30,600	—17,400	224,140	463,434	48.4

*Stocks east of California are those held at refineries; California include total inventories of finished gasoline and engine distillate held by California companies within Continental United States, (Stocks at refineries, water terminals, and sales distributing stations, including products in transit thereto).

of the period, it is probable that a production rate would be established which would prove excessive in the months immediately following the close of the period now under consideration. Without some limitation, the effort to coordinate supply and demand at that time might prove more burdensome than if a reasonable figure were established as the maximum daily production rate to be effective during the summer period.

If the average stock reduction effective during the first five months of the preceding semester should continue throughout the period now under consideration, field and pipeline stocks of domestic crude oil would be further reduced by 16,082 barrels. With such reduction in stocks, the domestic crude oil requirement to be met from production would amount to 445,352,000 barrels, an average daily rate of 2,438,600 barrels. Should it be determined by the oil industry that crude oil inventories should be liquidated to a degree comparable with that indicated, it would follow that not more than 2,450,000 barrels daily should be produced during any portion of the period now under consideration.

Data are not available showing the quantity of crude oil held in or drawn from field storage in each of the producing States, because present statistical information is divided by major producing areas without regard to state boundaries. The committee, consequently, is not in a position to indicate the extent to which each producing state should participate in the reduction of crude oil stocks.

Having estimated the relative proportions of the domestic crude oil requirements which may be allocated to each of the major producing states and having further reviewed national accomplishments in the reduction of crude oil stocks, the committee believes that the decision as to the quantity which should be drawn from storage and that which should be supplied through production, is one which may best be determined by the oil industry in each of the states, having available the necessary data regarding the amount of crude oil held in storage within the state and the relationship existing between local withdrawals and the national total.

The committee is of the opinion that many of the estimates of potential production, which have been accepted as reliable, are in excess of what should be regarded as true potentials and that the formulation of more accurate estimates would be of economic benefit to the oil industry.

Since large amounts of crude oil are held in storage primarily as an insurance against shortage, rather than as working stocks, more accurate estimates of potential production are necessary for the formulation of an adequate long-time policy. It is suggested, therefore, that a committee of competent petroleum engineers be designated by the oil industry promptly to consider the possibility of developing a more systematic method for estimating potential crude oil production.

The committee, further, is of the opinion that the determination of a reasonable maximum daily crude oil production rate during the present period should also consider the probable domestic crude oil requirements during the last quarter of the year, or the three months immediately following the period now under consideration. The committee, therefore, suggests that the estimates presented herewith be reviewed, as of July 1, 1931, in the light of information which will have become available in the meantime, and that the present estimates be extended, at that time, to include the period Oct. 1 to Dec. 31, 1931.

950-Mile Line Nears Completion

NEW YORK—The last section of the world's longest natural gas pipeline will be laid by Ford, Bacon & Davis, Inc., engineers here. The line, 950 miles long, extends from the Texas Panhandle to Chicago. The last link, which runs from Rock Island to Joliet, Ill., will be 155 miles long. The contract calls for completion by July 1.

Among the oil companies who will own this line are the Standard Oil Co. of New Jersey, Cities Service Co., Texas Corp., Skelly Oil Co., and Phillips Petroleum Co.

Our Industry is Solicited to Aid In Perpetuating Drake Well

TITUSVILLE, Pa.

THE birthplace of our industry — the world-famed Drake well at Titusville—needs preservation. And an opportunity for oil men the world over is being provided this year to perpetuate the shrine of petroleum.

The opportunity is provided in the plan to make a park of the site where a few persevering men drilled the first petroleum well in the summer of 1859.

The Drake well at Titusville, Pa. Arrow points to projection of old casing. The boulder with bronze tablet was erected in 1914 by the D. A. R. chapter at Titusville

The plan involves expense but men who are grateful for the bounties petroleum has given them, are confident that the entire oil industry will rally to put into material form the spiritual regard the industry has always held for the little tract south of Titusville where Edwin L. Drake and a few associates, undaunted by adversities, were midwives to an industry that is now worth billions.

The plan is to make a park of not more than 25 acres around the old well. Citizens and oil men who have come out of Titusville have pledged to provide the land. The city of Titusville will build a concrete highway to its corporate line nearest the well, and Venango county will continue the highway into the park and around the well.

The state of Pennsylvania, by legislative enactment, has agreed to make the site a state park, and to maintain it after it is reclaimed from the wilderness that surrounds it now. It will contain a museum where relics of the early oil days will be housed in safety.

When completed the shrine will be a fitting tribute of the appreciation of a great industry for its founders—a mark of respect toward which every oil man may contribute his mite.

The Drake well site is really in danger of being obliterated. The turbulent waters of Oil creek, on whose bosom the first petroleum was shipped to a market, threaten to wash away the land about the Drake well every spring in spite of all the citizens of Titusville have been able to do to divert its flow.

To safeguard the well site against further erosion, to clear the land of underbrush and landscape it, and to build a keeper's cottage and museum will require a minimum of $60,000. This sum is the estimate of the city engineer of Oil City.

Contributions in excess of $60,000 will make possible a larger and more pretentious museum and perhaps put the grounds in more attractive shape.

William R. Boyd, Jr., executive vice-president of the American Petroleum Institute, has

The flood plain of Oil Creek which is to be converted into a park. The picture was taken from the Drake well looking toward the entrance to the proposed park

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consented to act as treasurer for the fund which is to be collected by a committee of which he, Christy Payne, Standard Oil Co. of New Jersey; W. M. Irish, Atlantic Refining Co.; L. W. Young, South Penn Oil Co.; and Charles L. Suhr, The Pennzoil Co., are members. Mr. Boyd is acting in an individual capacity and not as an A. P. I. official.

Three trustees from the old oil country, who have been appointed by the A. P. I. will have charge of the expenditures. The trustees are S. Y. Ramage, Oil City, Pa.; A. R. Wheeler, Endeavor, Pa., a member of the Pennsylvania legislature, and James H. Caldwell, Jr., Titusville.

The plan has been indorsed by the directors of the institute but they feel that financing of the work is outside the functions of that organization.

The Drake well is in a sector made by a bow bend in Oil Creek. It is in the creek's flood plain and water has frequently swept over it. An old channel of the creek lies only about 200 feet from the well. Water in the past has widened this channel and so threatened the well that two years ago the Candohta chapter of the Daughters of the American Revolution in Titusville and a group of Titusville citizens built a dike at the head of the old channel. This dike has aided materially in holding back floods from doing further damage to the site but at best it is a temporary remedy for a bad situation and not a cure.

A large boulder was erected in 1914 at the Drake well by the D. A. R. on which is a memorial tablet. A casing set in the well in 1888 protrudes a foot or more above the rockery that protects the boulder. The well is capped with an iron plug on which is embossed the name of the well and the date it was drilled in.

The D. A. R. before setting up the memorial acquired more than an acre of land about the well. This land is the nucleus of the proposed park. It was first proposed to buy surface rights to about 15 acres north of the well but because some difficulties have been encountered in the negotiations for it, land may be acquired to the south, on the side farthest from Titusville. In this southern tract are numerous old pits which, according to the lore, were used by the Seneca Indians in which to trap rock oil seepage long before one ever thought of drilling a well for oil.

In the easterly part of the proposed park is an old mill race, now partly filled in, which was used to supply water power to two sawmills that supplied rig timber in the early development. It is planned to reclaim this old mill race as a small lake.

An island lies between the old and new channels of the creek. It is planned to build a dike across this island to a height one foot above the highest known flood in the creek. Rip-rap and piling are to be used to protect the dike on the creek side. Dirt excavated from the creek side of the dike is to be used to build the dike and to fill in the old channel.

Water for the lake will be supplied from the creek through a 24-inch conduit. Flow of water will be regulated with gate valves.

Tentative plans for the project have been made by B. B. Weber, city engineer of Oil City, who has estimated the cost of building the dike, doing the necessary excavating and filling in, and clearing the land at $47,000. This estimate does not include the cost of landscaping, or the building of a keeper's cottage and museum. The minimum for the latter work has been estimated at $13,000 but a larger sum would be necessary, say men who have devoted a great deal of time to the plan, if the buildings are to be in keeping with the remainder of the project.

The Drake well has been capped a long time but when opened the last time oil could still be bailed out. It is almost 72 years since the well was drilled in. There are still operating 11 wells in the immediate vicinity of the Drake well. These 11 wells are making an average of 50 barrels total a month. The wells are owned by Mrs. John Preston of Titusville.

A coupon is printed herewith which should be sent to William R. Boyd, Jr., care of the American Petroleum Institute, 250 Park Avenue, New York City, with a check or a pledge to send a check on some specific date. Here is an opportunity for every man in the industry to show his respect for the Founder.

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Organization of Cooperative Crude Selling Agency Completed

LOS ANGELES, April 11 CALIFORNIA'S latest contribution to proposed methods for stabilizing the oil industry, in the form of the recently organized Oil Producers' Sales Agency, is attracting much favorable comment from major and independent operators alike.

At meetings held the past week, Ralph B. Lloyd, a large land and royalty owner in the Ventura Avenue field, was elected president of the agency, Rush Blodget, vice president and acting general manager of George F. Getty Inc., executive vice president; Niel Anderson, proration umpire for several California fields, second vice president, R. R. Templeton, Pacific Western Oil Co., secretary-treasurer; and Judge William Hazlett, legal counsel.

A general manager is still to be appointed, who shall manage and conduct the affairs of the agency. At present Rush Blodget is acting as temporary general manager.

With a fair representation of crude oil producers and members of the industry not interested in refining or marketing oil already signed up membership applications are being circulated among other California operators in an effort to bring into the organization all crude oil producers in the state.

An important function of the agency as laid down in the articles of incorporation is to gather and disseminate among the members available information on costs of production in California and elsewhere, the actual prices for which products were sold in previous transactions. It will also have information as to stocks on hand from time to time, as to approximate costs of transportation from points of production to points of deliveries, as to the readiest and most available market and market prices for such products, and any other information that might be of value in the operations of members.

As an aid to conservation, the by-laws provide membership in the association shall be involuntarily terminated if the operator does not market all his products, crude oil, wet or dry natural gas and casinghead gasoline — through facilities provided by the agency. The agency is expected to have the first choice of available market outlets and will offer these as an incentive to small producers for their agreement to produce oil in accordance with requirements.

Since it is deemed impractical and difficult to ascertain the amount of damages to the agency or its members through the failure of individual members to abide by rules and regulations of the agency and particularly to market all of their products through the agency, the following provisions are made:

"If any member refuses to market his said product which he has to market or dispose of, through facilities of the agency, or should violate provisions of the sales contract, or should refuse to abide by lawful including contractual orders, governing curtailment or production of any of his products, such members shall pay to the agency as liquidated damages, the sum of $10 per barrel upon his daily production of said oil produced at the time of any such violation, which production shall be deemed to be his average daily production during the next preceding 30 days."

RELATIVE to voluntary termination of membership, the bylaws provide that no member may resign or withdraw within six months after he becomes a member. Besides requiring a 30-day notice of the intention to resign, the provisions are, that such resignation shall not become effective until all obligations owed by the members to the agency shall have been paid.

The agency is further given power to revise rules and regulations with reference to the form of contracts to be used in selling the products, temperatures at .which gravities and volume of clean oil shall be computed, the method of ascertaining gasoline content and other mechanical features involved in measuring and gauging quantity and quality of the products. It is also to have the power to regulate the production in accordance with market demand so as to prevent wasteful overproduction, and to prevent loss of ultimate production.

CONTRACTS entered into by the agency shall provide that each member shall be entitled to sell only his fair share of the products that can be sold under current demand as determined by the board of directors.

A membership fee of $50 is to be levied against all members having a daily crude production of less than 100 barrels per day and $100 against producers having daily crude outputs in excess of this figure.

At the request of Mr. Lloyd, Paul N. Boggs, chairman of the statewide oil curtailment committee has issued a call for a meeting of the Committee of Eleven on Economics of the Oil Industry for April 13. This committee is to assemble reports that will give the present status of production, storage, manufacturing requirements, and consumption of petroleum products on the Pacific Coast. A report from this committee is to be submitted to the agency on April 15 to aid it in preparing an operating schedule.

At this meeting the three party contracts between the

agency, producers and purchasing companies will be submitted to major oil company representatives.

The following list of operators have been elected to positions on the board of directors of the sales agency:

R. R. Templeton, Pacific Western Oil Co., Rush M. Blodget, Geo. F. Getty, Inc., Neal H. Anderson, A. T. Jergins, A. T. Jergins Trust, Hooper C. Dunbar, Bell View Oil Syndicate, Alphonso E. Bell, Alphonso E. Bell Corp., C. C. Spicer, Republic Petroleum Co. Ltd., Ralph B. Lloyd, Lloyd Corp., H. A. Bardeen, Bardeen Petroleum Corp. Ltd., Ila A. Sample, Guiberson Oil & Investment Co., R. A. Broomfield, Jr., Barnsdall Oil Co. of Cal., R. W. Simpson South Basin Oil Co., Dana Burks, Joseph B. Dabney, Dabney-Johnson Oil Corp., Ralph M. Smith, Ventura Land & Water Co., N. E. Grable, Walter F. Scott, Thomas W. Pyle, C. M. Shannon, R. E. Richardson, S. B. Mosher, Signal Oil & Gas Co.

Crude Marketing Group Not Yet Completed

LOS ANGELES, April 3

Details of California's Independent Producers Sales Agency, recently incorporated to aid in marketing crude oil on the Pacific Coast, are still somewhat in the air although numerous meetings were held the past week in an effort to line up the organization and select a board of directors and a general manager.

Some difficulty has been encountered in obtaining representative men to fill the directorate to be made up of 21 independent oil producers. It is reported that William C. McDuffie, receiver in equity for Richfield Oil Co., has been offered the job of manager of the new agency.

Formation of such a marketing organization is considered a definite step forward in bringing Pacific Coast markets to a stabilized footing, since it would tend to remove cheap surplus crude from the open market and thereby from the hands of the bootleg refiner.

Three Factions Battle Over Changes in Oil Laws

LOS ANGELES, April 10

AT LEAST three distinct divisions of the California oil industry are at loggerheads over various legislative measures now before the State Senate and Assembly at Sacramento, and representatives of all three were present to argue for their respective cause in the state capitol during the past week.

Proponents of Senate Bill 362, drawn up by A. L. Weil, General Petroleum Corp., to provide the appointment of three conservation commissioners, were opposed by a minority group representing the local Independent Petroleum Association, and only half heartedly supported by a group of larger independents who offered drastic amendments to the act.

This latter group laid claims to approximately 100,000 barrels daily of the state's prorated allowable production and as such became a considerable factor. Pacific Western Oil Co., Superior Oil Co., Richfield Oil Co., the Dabney-Johnson interests, a number of smaller companies, and several large land and royalty owners at Santa Fe Springs were reported included in this faction.

In some 30 amendments proposed by A. L. Weil to his bill, is one providing that the number of conservation commissioners be increased from three to five, four of them to be chosen by the Oil & Gas District commissioners (two for a two-year and two for a four-year period), and the fifth to be appointed by the governor for three years and his successor for four years.

Other amendments offered by Mr. Weil provided that the total amount of production without waste, as determined by the commission, shall be allocated among the different fields so as to avoid discrimination in the quantity of production from any field, zone, or property.

This is to take into consideration, the extent of the respective areas and their recoverable oil content, the stage of development of each field or zone, the potential production of the wells, the size and condition of the wells, the quality of the oil produced and the demand for it.

In the unamended passage it provided that this total production without waste should be distributed among producing fields so as to avoid a diminution in the total amount of oil ultimately recoverable from any field, zone, or property.

Still other amendments relate to court proceedings during a test of the validity of the act and others provide for the industry to pay for expenses incurred in enforcing the law.

Members of the Pacific Western-Superior group proposed amendments to the Weil bill the most important of which would have given the commission power to control drilling of wells. Permits would be required for drilling or deepening operations and no permit would be issued where waste might result.

This amended bill was defeated at the hearing April 8, but it is considered likely that some of its features will be incorporated before the selected draft is put to a vote.

Representatives of the Independent Petroleum Association opposed both the original and amended bills and offered one that provided that the governor should appoint a committee of five members to make a survey of the oil industry and its legislative needs. This committee to report back to the governor not later than Jan. 31, 1932. This bill appropriates $100,000 for expenses.

Increases Crude Takings

TULSA, April 14.—Effective April 1 Continental Oil Co. began taking four barrels daily from the leases to which its pipelines are connected in the Wichita Falls district. Previously it had prorated on a basis of 2½ barrels daily.

Ellsworth Anticline to be Area of Important Development Later

By Lawrence E. Smith

N. P. N. STAFF WRITER

TULSA, April 11

"IF THERE were a market for the oil, at a decent price, there would be 600 wells drilling in Rice, Ellsworth and Stafford counties," said an executive of a prominent company.

After several years of discouraging results in the big western Kansas "play" which saw the leasing in both block and checkerboard form of thousands of acres, some of the operators are beginning to get some result from their explorations.

Interest is high now in that production path which follows a long structural feature known as the Ellsworth anticline, trending in a northeast-southwest direction. Producing wells which find their oil in the Siliceous lime of Ordivician age have been drilled in southwestern Ellsworth, western Rice and northeastern Stafford counties.

These have had initial flows or swabbing tests so imposing as to suggest that another "golden lane" may be in the making. Outpost wells on this anticline are about 35 miles apart, with a substantial field partly drilled lying about midway between them.

This pool is the Raymond, or Schurr, situated in Sec. 21, Twp. 20S., R. 10W., southwestern Rice county. It was discovered in October, 1929, by the firm of Steinbuschel & Hilligoss. The first well was in the NE SW of Sec. 21. Siliceous lime was topped at 3378 feet and nine feet in the well made 197 barrels. It was later deepened to 3308 feet and produced 860 barrels in 20 hours. The discoverers not long afterward sold to Slick, Pryor & Lockhart.

At this time there are 12 producing wells in the pool, two rows of offset producers running east and west through the center of Sec. 21. They ranged, initially, from 500 to 1500 barrels daily. The field is limited on the east by a dry hole and there is another a half mile south of production, but the west and north sides are still open.

Besides Slick, Pryor & Lockhart, the following own production in the pool: Vickers Petroleum Co., Allison & Fitzwilliams, The Texas Co., Phillips Petroleum Co. and the Producers & Refiners Corp. The pool is entirely shut in, although the Prairie Pipe Line Co. has an eight-inch line connecting with its system farther east. Some production was moved by tank car in the earlier stages of development.

Some 15 miles southwest of the Raymond pool is the farthest south well on the Ellsworth anticline. Midwest Exploration Co., drilling in the approximate center of a large block of leases, 12 miles north of Stafford, Kans., found the Siliceous lime productive at 3540-99 feet.

The first yield of the well was 340 barrels in six hours. The location is in the SE corner of 36-22S-12W. The appearance of Stafford and Pratt counties for future production is greatly helped by this well. The production is not being marketed.

THE outpost well on the north of this "play" is the No. 1 Stratman of J. A. Aylward and others—a recent completion. It is in the SE NW SE of 1-17S-10W and is a little more than three miles from production. With the Siliceous at 3250-55 feet, the hole filled with oil of nearly 50° A. P. I. gravity and a later swabbing test was at the rate of 1200 barrels daily.

Like the other wells located on the Ellsworth anticline, Aylward's producer is shut in. There exists today a developed production of at least 15,000 barrels per day on the Ellsworth structure, all high gravity oil, without market.

South of the Aylward well is the Slick, Pryor & Lockhart No. 1 Heiken, in which that firm, the Darby Petroleum Co. and Ainsworth Bros. each own a one-third interest. The well is in the NW NW of 25-17S-10W. It was drilled into Siliceous lime production last November, the pay being found at 3217-43 feet and while it has never been given a sustained production test, it is rated from 1500 to 2000 barrels daily. It is in a fairly solid block of leases and as the leases have several years to run, no further drilling is to be expected until there is a demand for the oil.

ABOUT seven miles south and two and one-half miles east of the Slick et al well is the No. 1 Ploog, of Tatlock and others, in the center of the SW SE of 33-18S-9W. Production is from the Siliceous at 3249-52 feet. When completed last August the well swabbed 712 barrels in four hours. It is estimated as being good for 4000 barrels per day. Carter Oil Co. and Shell Petroleum Corp. are the principal owners of the large block in which this well is located and it will be developed as a unit when conditions become opportune for drilling.

Going on south of the Ploog well four miles there is the well of Muth Brothers, NE NW of 21-19S-9W. This was completed Feb. 18, 1931, for initial swabbing production of 134 barrels in 8½ hours, being somewhat lighter in production than

the several other "discoveries" in this trend.

Two and one-half miles west and five and one-half miles south of the Muth well is the recently completed test of Cress and others, SE NE of 13-20S-10W, which is three miles east and one mile north of the Raymond pool's eastern limits. The Cress well had Siliceous lime at 3330-36 feet, filled rapidly with 47° A. P. I. gravity oil and was shut in without a test.

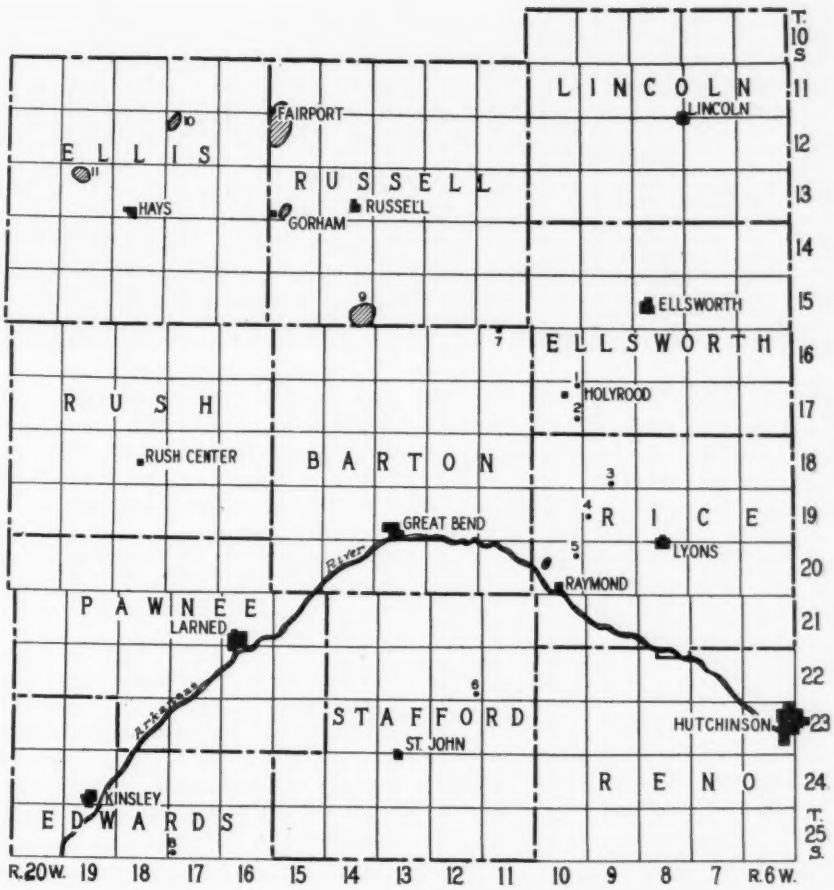
The foregoing brief account of the Ellsworth anticline production serves to sum up the activity that has been under way. Drilling, except for a few scattered wildcats, is practically at a standstill and regardless of the excellent showing of most of these wells, they have been completed without particular interest except that which is felt by their owners. Larger developments elsewhere have overshadowed them, although they would call for a big development campaign in seasons when there is a real market for oil.

No one who has studied the area believes that these scattered producing wells point to a continuous zone of production over the many miles between the wells. Rather, it is believed, the wells are located on local "highs" on the main anticline and that each local "high" will be productive over a section—640 acres—or more. This estimate is something more than a guess; it is based upon such information concerning structural closures and water table position as can be obtained in such a preliminary stage of development.

While there is no productive history upon which to call, some estimates have been made on the probable ultimate recovery of oil from the Siliceous lime in this area. They vary somewhat, with 6000 barrels per acre as about the mean.

It is recognized that the productive life of these pools will be somewhat different than has been the case with pools producing from the same formation, such as Garber and Oklahoma City. Because the pay formation differs from the Siliceous lime in pools of Oklahoma it is expected to yield its oil at a slower rate with probably a slower encroachment of water.

It is anticipated that western Kansas pools producing from this formation will all make water in substantial amounts early in the life of the fields, but that it will not present great operating problems, such as cutting the oil.

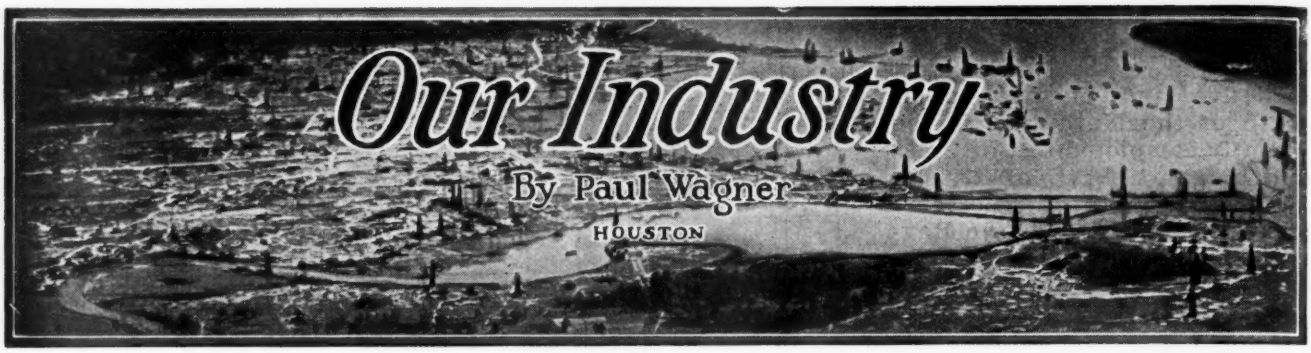


Map of western Kansas counties showing pools under development and developed and the several discovery wells that have made the Ellsworth anticline an important area for future development. Numbers on the map refer to wells and pools, as follows: 1—Aylward well; 2—Slick, Pryor & Lockhart well; 3—Tatlock et al well; 4—Muth Brothers well; 5—Cress et al well; 6—Midwest well; 7—Prairie Oil & Gas Co. well; 8—McCarthy pool; 9—Sellens pool; 10 and 11—pools of Ellis county

The accompanying map indicates the position of the wells which have brought the Ellsworth anticline into industrial importance and shows the relation of such wells to development farther west. Notable in the latter class is the Sellens pool, of southern Russell county. This is a Siliceous lime development also and while it covers a substantial amount of territory and has two or three spots that promise to yield substantial production, it is not so highly regarded as is the Ellsworth development, including the Raymond pool. The Sellens pool at this time has 12 wells which are yielding around 625 barrels daily.

Other pools shown in Russell and Ellis counties include the Fairport field, a discovery of 1924, and the newer Gorham pool, of the same county. The Fairport pool produces from the Oswald sand of Pennsylvanian age and the Gorham, which had original production in that sand, has had its greatest recovery from the so-called Gorham sand which rests directly on the Siliceous lime. Recovery of the two pools to the end of the year 1930 was 4700 barrels per acre with substantial production still to come, although at a slow rate.

A small development in Edwards county shown on the map consists of three wells in Secs. 30 and 31, T. 25S., R. 17W. The largest of these is the Barnsdall Oil Co.'s No. 1 McCarty, producing currently 70 barrels per day. This small pool is not considered to be identified with the Ellsworth anticline "play" but to be on another of the several regional folds which exist, washboard fashion, across this part of Kansas.



DEVELOPMENT of the Sabine Uplift region in East Texas has resulted in transfer of Humble Oil & Refining Co.'s division offices from Corsicana to Tyler, under Supt. Arthur O. Behling. They were established at Corsicana eight years ago, at the height of Mexia-Powell development, and Mr. Behling placed in charge upon resignation of Ray W. Richmond, as superintendent, to engage in contract drilling. Mr. Richmond later became proration umpire in Pecos county, West Texas. Mr. Behling has since been superintendent continuously at Corsicana, overseeing Jacksonville and Kilgore district operations from that base.

Besides Mr. Behling, the division staff moved from Corsicana to Tyler includes H. E. Porter, petroleum engineer; A. A. Klein, chief clerk; Miss Ruby Ferguson, stenographer; W. M. Rawles, engineering department; and H. J. McClelland, geological department, previously transferred.

* * *

William von Phul, Jr., southwestern division manager, and A. W. Cherry, general superintendent, have established Dallas offices in the First National Bank building for Ford, Bacon & Davis, Inc., pipeline engineers and contractors.

* * *

R. W. F. Newton is in charge of the construction work on the new Mexico City refinery of the Mexican Eagle Oil Co., Ltd., "El Aguila" of the Royal Dutch-Shell group. This interior plant which is being built to supply gasoline in the Mexico City district and fuel oil to the National Railways of Mexico, is to be connected with Tampico district producing fields by pipeline.

I. R. Sheldon, geologist of the Atlantic Oil Producing Co., recently transferred to San Antonio from the Wichita Falls district, holds an enviable golf record. He has won seven out of nine golf tournaments of the American Association of Petroleum Geologists.

* * *

Carl Boucher, formerly Olden district chief clerk, has been transferred to the Dallas headquarters purchasing department of Magnolia Petroleum Co. C. D. Coe succeeded Mr. Boucher at Olden.

* * *

T. R. McIntyre has been appointed auditor of the General Petroleum Corp. of California, subsidiary of Standard Oil Co. of New York, succeeding W. B. Thompson. Mr. Thompson resigned to join the Kettleman North Dome Association, which is proceeding with unified development of the Kettleman North Dome oil field.

* * *

M. A. Hardie is returning to Houston from San Antonio to have charge of the affiliated Moody-Seagraves and Saxet Oil Co. interests. He formerly lived in Houston as head of the United Gas Co.'s transportation units before control of that corporation sold by the Moody-Seagraves interests to the Electric Bond & Share Corp.

A. O. Behling

* * *

J. Volney Lewis will undertake to organize the work in geology, mining and metallurgy for the Chicago International Exposition in 1933, for which purpose he has resigned as staff geologist of the Gulf Oil Corp., for foreign operations. In assembling appropriate exposition exhibits he will co-operate with the National Research Council.

* * *

Roy L. Fuqua, Altamira production foreman of the Mexican Gulf Oil Co., in the Tampico district, has resigned to engage in drilling operations in the Kilgore area of the East Texas region.

* * *

Senators Woodward of Coleman, Woodul of Houston and Pollard of Tyler, all representing oil producing districts of Texas, have been named by Governor Sterling as members of a legislative group to work with committees of other states studying conservation in the southwest. When this was written the governor had not named the five house members of the Texas group who will make up the remainder of this state's full committee.

* * *

J. R. Kaufman, formerly of Fort Worth, is in charge of the new sub-surface laboratory opened by Pure Oil Co., at Van, eastern Van Zandt county, Texas. Fred Williams, formerly at Van, has been transferred to Tyler for collection of formation samples in the Sabine Uplift region.

Superiority of Alloys for Cracking Use Proved by Experience

ST. LOUIS

AN ALLOY containing 18 per cent chromium, 8 per cent nickel, not more than about 0.07 per cent carbon, with iron has proven to be the best material for high temperature work in cracking tubes, and for other purposes, according to the experience of refiners during the last two or three years. Statements to this effect were made by H. D. Newell of the Babcock and Wilcox Tube Co., in a paper on the use of this alloy, presented before the refining division of the American Petroleum Institute here this week.

Among the reasons given for the better qualities of this alloy as compared to others that have been employed are high corrosion resistance, high creep strength under high temperatures and pressures, resistance to oxidation under oxidizing flame conditions, and its great resistance to embrittlement under harsh operating conditions in cracking still or high temperature boiler.

Following the general use of carbon steels of 0.08 to 0.20 per cent carbon content as used in the earlier days of cracking and to some extent at present, several alloys have been developed for better service under strenuous conditions. Of these the four to six per cent chromium steel has been used with good results for certain purposes.

This alloy, however, shows a decided embrittlement after use for a considerable time under high temperature. Higher chromium steel shows still greater embrittlement under cracking temperatures, although a much greater resistance to corrosion. The so-called 18-8 alloy was developed with the addition of 8 per cent of nickel to prevent this embrittlement and has shown the best results yet obtained for this service.

Two alloys of this type have been used, one containing 0.16 per cent carbon or more, and the other with 0.07 per cent carbon maximum. The steel of lower carbon content has proven its superiority especially in retaining its corrosion resistance and its physical properties under operating conditions.

When heating tubes to temperatures of around 700 F. little difference is detected between the two alloys in their stand-up properties when the temperature is increased to 800 to 1300 F., which according to the author, is within the carbide precipitation range, it is very desirable to restrict the carbon content of the alloy to prevent this precipitation.

Heat treating an alloy containing carbon dissolves the carbon in the metal in such state that its existence or condition is not apparent by microscopic examination. This solution of the carbon in the metal requires a high temperature; on cooling under certain conditions the carbon crystallizes out as carbide particles at the boundaries of metal-grain particles, changing the physical properties and resistance to various attacks on the alloy.

THE 18-8 alloy is characterized as an austenitic material, and, when carbon is dissolved at high temperatures, the slow rate of transformation in this alloy enables the carbon to be retained in solution provided moderate rates of cooling are employed. Reheating will induce carbon precipitation, at certain high temperatures, the amount of precipitation being governed by the carbon present. It is therefore desirable to keep the carbon content low to prevent any more than a very small amount of precipitation.

Tests have shown that long heating of alloys at elevated temperatures will cause precipitation of carbides in the temperature range of 880 F. to 1800 F., and that hot-working of the metal in rolling, drawing, etc., must be done at temperatures of 1800 F. to 2150 F., in order to avoid changing properties during the working by carbide crystallization, the formation of ferrite.

The retention of the original physical properties during heating, working, etc., is nearly complete if the carbon content of the alloy is thus held to low limits, and the author states that, with the limits stated, the changes in use or working are not of a serious nature. Deposition of carbides at the boundaries of metal particles decreases the corrosion resistance of the metal, although in refinery service the change in oil corrosion property seems to be small, change in physical properties being the greatest drawback.

ONE of the most important properties of a metal for refinery use is creep strength, that quality which enables the metal to withstand stress for long periods without appreciable deformation. The author stated that creep stress values for the 18-8 alloy are much in excess of those for carbon steel, and that steel of the four to six per cent chromium class has no advantage over carbon steel, so far as creep strength is concerned.

The author further pointed out the great necessity for care and accurate control in the manufacture of these alloy tubes, the influence of differences in temperature on the properties of the finished product. Ductility, hardness, creep strength, and other properties vary over wide ranges dependent on the conditions of manufacture. Batches of 18-8 alloy are made in electric furnaces in relatively small lots, carefully controlled batches of not more than 20 tons being the usual amounts.

The alloy is aso sensitive to methods of working into head-

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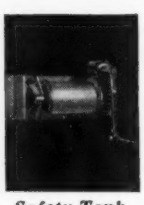
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ers, and must be properly controlled to avoid seriously changing the character of the metal at those points with resultant failure later on. Heat treating does not affect the change in the properties of 18-8 alloy as with many steels, only those changes mentioned above being of importance.

Corrosion losses in stills using West Texas and California corrosive crudes have been reduced in great measure by the employment of these tubes, according to the author. Only slight gains in inner diameter have been noted, under conditions where carbon steels must frequently be replaced.

The most frequent causes of failure in this type of tubes, a study of the not more than 20 failures that have been reported reveals, are due to overheating of some portion of the tube. Overheating is evidenced by microscopic examination showing that the carbides have been precipitated in the failed portion, and coalesced into larger particles than common, weakening the tube. Carburization by absorption of carbon on the inner surface of tubes from coke permitted by the operator to accumulate, has resulted in some cases noted.

The most important considerations of the operator are to use furnaces properly designed to avoid local overheating, and to clean tubes frequently. Since no bulging occurs before failure with these tubes, precautionary measures are doubly necessary, the author believes.

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Relation of Automobile Fuel Line Temperatures to Vapor Lock

By Oscar C. Bridgeman*

(Presented before American Petroleum Institute, St. Louis, April 15-16)

SINCE vapor lock is a result of boiling of the gasoline in the fuel-feed system, the first step in the general investigation was to determine the method of measuring vapor pressure which would give results significant as regards vapor lock. Due to the fact that gasoline is a complex mixture of hydrocarbons, and that it normally contains dissolved gases, the magnitude of the measured vapor pressure will depend to a large extent upon the method of measurement.

A preliminary investigation of the solubility of gases[1] in gasolines indicated that the amounts of dissolved gases (exclusive of propane) normally present were too small to cause trouble from vapor lock in a reasonably well-designed fuel system.

Accordingly a method[2] was devised for preparing gas-free samples of gasolines and for measuring the true vapor pressure of these gas-free gasolines over a range of temperature. Data were obtained on 42 diverse gasolines, and included the effect of addition of benzol up to 40 per cent, of butane up to 20 per cent, and of propane up to 5 per cent. Information was also obtained on the variation in vapor pressure with increase in the amount of vapor formed, since fuel systems vary somewhat in their capacity for handling vapor.

The precision method developed at the Bureau of Standards for the determination of gas-free vapor pressures is not suitable for routine work, but it has a distinct advantage in its possibilities as a standard method for comparing the accuracy of more practical methods. An extensive comparison with three such methods was made.

1. The temperature on the A. S. T. M. distillation curve at 10 per cent evaporated was found to be equal to the normal bubble point,[3] or the temperature of boiling at sea-level atmospheric pressure, for propane-free gasolines having conventional distillation curves. For gasolines containing propane, the boiling temperature is lower than the 10 per cent point.

Each per cent of propane by volume increases the vapor pressure by 2.2 pounds per square inch at 100 F., and lowers the boiling temperature by about 15° F. for a gasoline having a vapor pressure of 8 to 10 pounds per square inch at 100 F.; whereas there is a much smaller effect on the 10 per cent point. Hence, the 10 per cent point represents essentially the maximum fuel temperature in the feed system without encountering vapor lock, while trouble may be encountered at lower temperatures due to the presence of propane.

2. The temperature of the

[1] *J. Soc. Automotive Eng.*, **27**, **no. 1**, 93 (1930).

[2] *Bull. Amer. Pet. Inst.*, Jan. 2, 1930, Sect. III, p. 4.

*Bureau of Standards, Washington, D. C.

[3] The cooperating laboratories were: the General Motors Corporation, The Chrysler Corporation, The Standard Oil Development Company, The Central Illinois Public Service Company, and the Armour Institute of Technology.

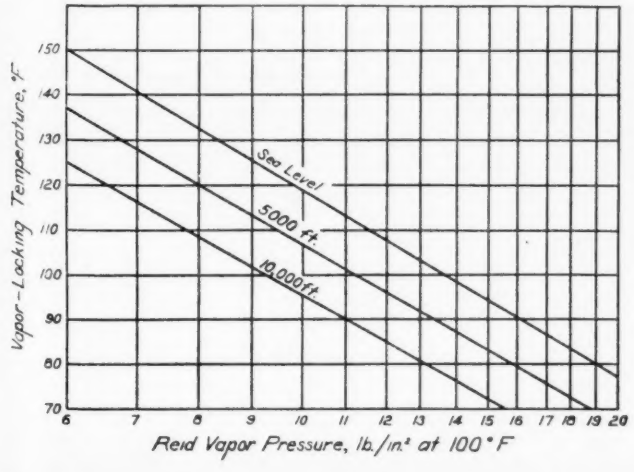

Fig. 1—Relation between Reid vapor pressure and vapor-locking temperature at various altitudes

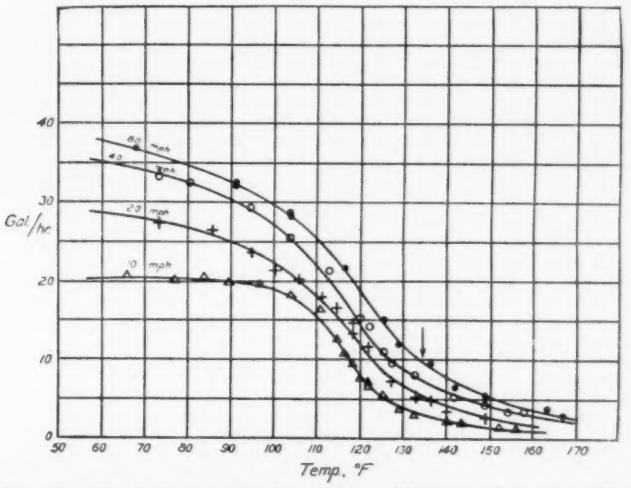

Fig. 2—Typical temperature flow diagram for an automobile fuel pump

Table 1

Fuel-Line-Temperature Increments Above Atmospheric Temperature (Deg. F.)

			Fuel-Tank Outlet			Fuel-Pump or Vacuum-Tank Inlet			Fuel-Tank or Vacuum-Tank Outlet			Carburetor Inlet			
Car	No. Cyls.	Type Feed	40 m.p.h.	Idle	Climb	40 m.p.h.	Idle	Climb	40 m.p.h.	Idle	Climb	40 m.p.h.	Idle	Climb	Average Atmospheric Temperature
A	6	P	....	26	....	....	40	....	....	46	....	....	42	....	90
A-1	6	P	22	28	....	44	57	....	52	67	....	56	61	....	80
B	6	P	10	13	19	17	34	26	20	41	48	26	61	37	75
B-1	6	P	8	11	....	10	11	....	22	47	....	26	59	....	80
C	6	V	13	20	24	20	52	38	24	40	38	35	45	50	70
D	8	P	18	22	....	36	56	....	47	57	....	50	60	....	70
E	6	P	18	22	....	36	40	....	48	60	....	35	37	....	55
E-1	6	P	29	29	36	42	54	51	44	64	51	40	64	49	75
F	6	V	11	21	25	25	56	41	36	61	53	35	69	55	80
G	4	G	21	21	28	....	....	....	31	63	41	44	68	57	80
H	8	P	20	21	28	49	62	52	73	90	66	60	74	61	65
I	8	P	26	34	....	32	38	....	39	56	....	46	64	....	85
J	8	P	....	....	....	30	37	37	39	53	45	49	81	57	80
K	8	P	18	21	20	34	48	40	49	66	58	50	66	64	80
L	8	V	20	....	24	33	51	39	38	38	43	57	87	73	70
M	4	P	....	13	....	....	41	....	....	55	....	....	47	....	80
M-1	4	P	24	27	32	35	53	48	47	69	60	45	62	58	85
M-2	4	P	15	....	....	14	19	....	29	48	....	33	51	....	80
N	6	P	22	25	28	44	55	53	58	72	67	49	64	59	80
N-1	6	P	16	....	....	15	25	....	32	61	....	34	61	....	80
O	6	P	20	24	25	38	47	44	58	77	60	53	66	61	75
P	8	P	13	14	....	19	33	....	33	57	....	37	58	....	85
Q	8	P	19	....	....	23	49	....	37	70	....	41	76	....	75
R	6	P	16	16	....	20	26	....	29	39	....	32	39	....	80
R-1	6	P	....	13	....	....	32	....	....	49	....	....	43	....	45
S	8	P	13	16	....	16	31	....	41	62	....	43	63	....	70
T	8	P	....	23	....	....	72	....	....	88	....	....	86	....	70

liquid initial boiling point in the A. S. T. M. distillation was found to be equal to the normal bubble point. This method is inaccurate, however, due to the difficulties of obtaining precise temperature measurements on account of super-heating of the gasoline.

3. Vapor pressures by the Reid method at 90 F. or 100 F. on all types of fuels investigated showed satisfactory agreement with the gas-free values when the former were multiplied by the factor 1.1 to correct for the large volume of vapor space employed in the Reid method. This method, therefore, serves as a general practical means of obtaining the boiling temperature of the fuel.

The relation between the Reid vapor pressure p_R at 100 F. and the vapor-locking temperature t at sea-level atmospheric pressure can be expressed as follows:

$$t = 259 - 140 \log p_R$$

where the vapor pressure is expressed in pounds per square inch and the temperature in degrees F. Equation (1) assumes an average slope of the vapor-pressure-temperature curve and a volume of vapor equal to that of the liquid before vapor lock occurs in the fuel-feed system.

Graphical representation of the relation between Reid vapor pressure and vapor-locking temperature is shown in Fig. 1. This chart also incorporates the effect of altitude on vapor-locking temperature, there being one line each for sea level, 5000 feet and 10,000 feet altitude. The vapor-locking temperature at 5000 feet is about 12° F. lower, and at 10,000 feet about 24° F. lower, than at sea level.

Equation (1) has been checked directly or indirectly in the case of a large number of fuels in laboratory fuel-feed systems and parts of such systems, and has been found to hold closely. With automobile fuel pumps, it was observed that there is some flow after the vapor-locking temperature is reached.

A typical temperature-flow diagram is shown in Fig. 2, where the arrow represents the vapor-locking temperature. The four curves represent maximum pump capacity at pump speeds corresponding to car speeds of approximately 80, 40, 20, and 10 m. p. h. for an average car. At a car speed of 40 m. p. h. the pump could deliver about 7 gallons per hour at the vapor-locking temperature, and at 10 m. p. h. about 3 gallons per hour.

These are sufficient to enable the engine in the average car to run smoothly, but engine stoppage would occur in most cars if the fuel were heated much above this temperature; for not only does the flow decrease, but it becomes irregular due to intermittent passage of liquid and vapor. In these experiments, the temperatures were measured at the fuel-pump inlet, and there was little temperature gradient across the pump.

In an actual fuel system, there is an average temperature increase of about 10° F. across the pump. Hence, vapor lock might be expected to occur in the pump when the temperature of the fuel entering the pump reaches the vapor-locking temperature.

Fuel-Line Temperatures

The relation between the Reid vapor pressure and the vapor-locking temperature expressed in equation (1), modified if necessary for altitude, gives the predicted conditions for vapor lock with any fuel. This makes it possible for the refiner to control the vapor pressure of his commercial product, if he knows the temperature which the fuel is likely to reach in service. However, very little information has been available on the fuel temperatures in automotive equipment. Accord-

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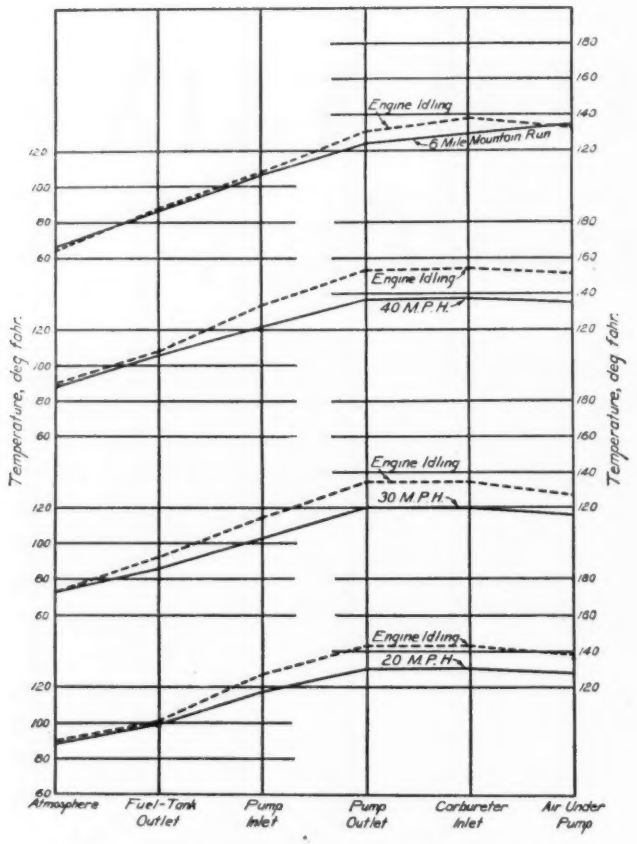

Fig. 3—Experimental data from tests on car "K"

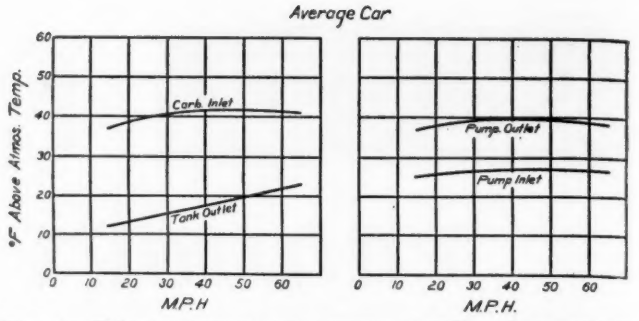

Fig. 4—Effect of speed on average fuel-line temperature of cars tested

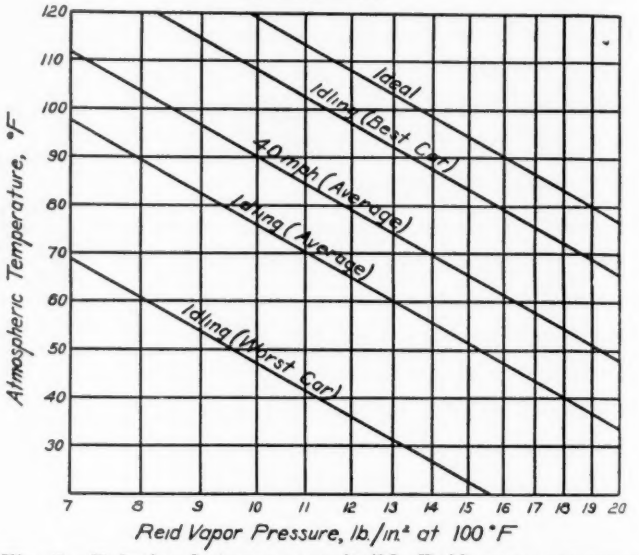

Fig. 5—Relation between permissible Reid vapor pressure and atmospheric temperature

ingly, during the summer of 1930, a survey of automobile fuel-line temperatures was made by the bureau of several co-operating laboratories.[3]

The points at which temperature data[4] were obtained in automobile fuel systems were as follows:

1. Vacuum-tank systems—fuel-tank outlet, vacuum-tank inlet, vacuum-tank outlet, carburetor inlet, and carburetor bowl in some instances.

2. Fuel-pump systems—fuel-tank outlet, fuel-pump inlet, fuel-pump outlet, carburetor inlet, and carburetor bowl in some instances.

3. Gravity-feed systems—fuel-tank outlet, sediment-bowl outlet, and carburetor inlet.

In every run, the outside air temperature was recorded.

In most of the tests, constant speed runs of 20, 30, and 40 m. p. h. were made. In some of the tests, constant speeds of 25, 50, and 60 m. p. h. and faster were employed. Each constant speed run was of such duration that the temperature at each point reached a maximum and remained constant.

A 40-mile run was found to be sufficient in all cases, while in some of the runs a shorter distance was sufficient. At the completion of each run, the car was drawn over to the side of the road and measurements made while the engine was idling with the gears in neutral. The idling period was of such duration that the temperature at each point reached a maximum and then dropped.

With about half of the cars, a run up a 6-mile hill was made at the maximum speed permitted by the steepness and by the curvature of the turns, which was about 30 to 40 m. p. h. The temperatures were recorded at stated intervals during the climb, and the maximum values while idling in neutral at the top of the hill were noted.

Data were obtained on 27 cars. Of this number, 3 have vacuum-tank systems, 23 have fuel-pump systems, and one has a gravity feed system. There are 4 four-cylinder cars, 13 six-cylinder cars, and 10 eight-cylinder cars. One of the cars is a 1928 model, 7 are 1929 models, 8 are 1930 models, and 11 are 1931 models. Two of the cars have V-type engines.

The method adopted in recording the experimental data is illustrated in Fig. 3 for car "K." The solid lines represent the maximum temperatures reached under the designated test conditions, and the dotted lines represent the maximum temperatures reached during idling in neutral after each test run. In order to make possible a more legitimate comparison between the data on different cars and on the same car when run on different days, the increases in fuel temperatures at each point above that of the atmosphere were evaluated.

A summary of the data on the 27 cars is given in Table 1 for temperatures at the fuel-tank outlet, the fuel-pump or vacuum-tank inlet, the fuel-pump or

[3]The cooperating laboratories were: the General Motors Corporation, The Chrysler Corporation, The Standard Oil Development Company, The Central Illinois Public Service Company, and the Armour Institute of Technology.

[4]For details of the temperature-measuring equipment, see *J. Soc. Automotive Eng.*, **28, no. 3,** 315 (1931).

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Table 2

Summary of Temperature Increments

	(Deg. F.) Average	Maximum	Minimum
A. Constant speed of 40 m.p.h.			
Fuel-tank outlet	18	29	8
Fuel-pump or vacuum-tank inlet	29	49	10
Fuel-pump or vacuum-tank outlet	41	73	20
Carburetor inlet	42	60	26
B. Idling after 40 m.p.h. run			
Fuel-tank outlet	20	34	11
Fuel-pump or vacuum-tank inlet	43	72	11
Fuel-pump or vacuum-tank outlet	59	90	38
Carburetor inlet	61	87	37
C. Climb up 6 mile mountain			
Fuel-tank outlet	26	36	19
Fuel-pump or vacuum-tank inlet	43	53	26
Fuel-pump or vacuum-tank outlet	54	67	38
Carburetor inlet	56	73	37

vacuum-tank outlet, and the carburetor inlet or bowl. All fuel temperatures are recorded as increases above atmospheric temperature. The temperature increments at 40 m. p. h., on idling after the 40-m. p. h. run, and during the climb up the 6-mile mountain, are listed in each group. The last column in the table indicates the average atmospheric temperature during the runs on each car.

The average maximum and minimum observed temperature increments about atmospheric temperature for the various fuel-system locations are listed in Table 2. The large differences between the maximum and minimum values are striking. It is interesting that the temperature of the gasoline in the fuel tank is considerably above that of the atmosphere, the average difference being about 20° F. In going from the fuel tank to the fuel-pump or vacuum-tank inlet, the gasoline is heated another 11° F. at 40 m. p. h., and 23° F. while idling after a 40-m. p. h. run.

Passing through the pump or vacuum tank increases the temperature still another 12° F. and 16° F., respectively, on the average. There is little change in temperature on passing from the pump or vacuum-tank outlet to the carburetor. It is of interest that the average increase in temperature during the climb up the 6-mile mountain is approximately the same as that during idling after the 40-m. p. h. run.

Although the values for a constant speed run of 40 m. p. h. only are listed in the table, the temperatures are essentially independent of speed, with the exception of the fuel-tank temperatures which show an increase with speed. The effect of speed on the average values for all of the cars is illustrated in Fig. 4, assuming a fuel-pump system.

Some very pertinent conclusions can be drawn from the data in Tables 1 and 2. Since the majority of recent cars are equipped with fuel-pump systems, and since there is a definite trend in that direction, consideration will be limited to such systems.

Vapor lock in a fuel-pump system normally occurs in the pump; and, as pointed out in the section on vapor pressure, the temperature of the fuel at the inlet to the pump is of most significance. Accordingly, taking the data for pump-inlet temperatures in Table 1 in conjunction with equation (1), the chart shown in Fig. 5 can be constructed.

The lines represent the atmospheric temperatures at which vapor lock would occur under the conditions specified when using gasolines of various vapor pressures. The ideal line represents a fuel system in which the temperature of the gasoline does not rise above that of the atmosphere. It is the limiting line which can be approached by improvements in fuel-line design, but cannot be passed without recourse to refrigeration.

The space to the right of each line represents a region where vapor lock would occur under the conditions specified on the line, while the space to the left represents a region in which vapor lock would not be expected to occur. The two average lines represent the averages of the pump-inlet temperatures in the cars tested, and about half of the cars run in these tests would give vapor-lock trouble on fuels which would just be satisfactory in the average of the cars.

It should be pointed out that the vapor pressures in Fig. 5 apply to the gasoline in the fuel system, and not to the gasoline as it leaves the refinery. Accordingly, these vapor pressure values can be increased by about 1 pound per square inch on the average to make them applicable to the product as shipped from the refinery.

Considering an atmospheric temperature of 90 F., the vapor pressure must be less than 16 pounds per square inch to prevent vapor lock in the ideal fuel system. On the other hand, the vapor pressure must be less than 8 pounds per square inch on idling, and less than 10 pounds per square inch when driving at 40 m. p. h., if vapor lock is to be avoided in the average of the cars tested. This difference of 8 pounds per square inch in vapor pressure is indicative of the departure of the average fuel system from the ideal system.

While the ideal system probably cannot readily be realized, marked improvement in design unquestionably can be made, and it should be possible to reach the line obtained on idling with the car having the lowest temperatures of those tested, designated in the figure as "best car." This would make possible the use of gasolines having vapor pressures as high as 13.5 pounds per square inch at 90 F. atmospheric temperature.

An equally interesting comparison can be made between the best car and the worst car tested. At 70 F. atmospheric temperature, freedom from vapor lock requires a gasoline having a vapor pressure less than 7 pounds per square inch on idling with the worst car, and less than 18.5 pounds per square inch on idling with the best car. This difference is representative of the extreme variations in fuel-system design and fuel-line temperatures in present-day cars. Neither of these cars is high-priced, nor are they present on the road in small numbers.

The lines in Fig. 5 are applicable to sea-level atmospheric pressure. While similar charts could be drawn for other altitudes, it is usually simpler to make correction for this by lowering the vapor-locking temperature 2° F. for every 1000 feet increase in altitude. A simple rule for change in permissible vapor pressure with temperature is also indicated by Fig. 5, viz., that the permissible vapor pressure increases about 2

pounds per square inch for every 10° F. lowering of atmospheric temperature.

This change is based on the assumption that the increment above atmospheric temperature is independent of this temperature. This is probably not strictly true over wide temperature variations, and at low atmospheric temperatures the permissible vapor pressure may be slightly lower than that indicated by the lines.

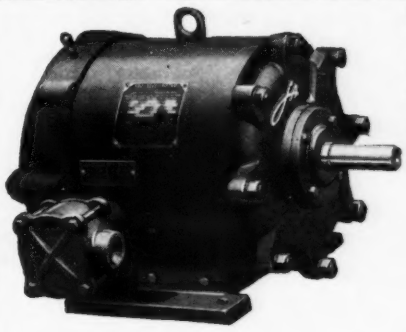
The marked difference between the vapor-locking lines for present-day cars and for an ideal fuel system raises the the question as to what the automotive designer can do to remedy the situation. One of the simplest changes is to transfer the fuel line between the rear tank and the pump to the outside of the frame channel.

The effect of this simple change is illustrated in Table 1 for cars M-1 and M-2 and cars N and N-1. For comparison, the increment above atmospheric temperature at the fuel-pump inlet are summarized below:

Car	Position of Line	Temperature Increments Deg. F. 40 m.p.h.	Idling
M-1	.....Inside.....	35	53
M-2	.....Outside.....	14	19
N	.....Inside.....	44	55
N-1	.....Outside.....	15	25

The decrease in temperature thus effected by this change in fuel-line position corresponds to an increase in permissible vapor pressure of approximately 5 pounds per square inch. Other simple changes consist in insulating thermally the fuel-feed line, in reducing heat conduction from the engine to the fuel pump by choice of suitable location, in increasing the efficiency of cooling the pump by the air stream, and in shielding the pump from absorption of radiant energy.

It is felt that much can be done in the way of simple modifications, such as those outlined, which will go far to reduce fuel-line temperatures to reasonable values. Where this is done the automotive engineer has done his part in connection with the immediate problem of vapor lock, and the remainder is largely up to the petroleum refiner.



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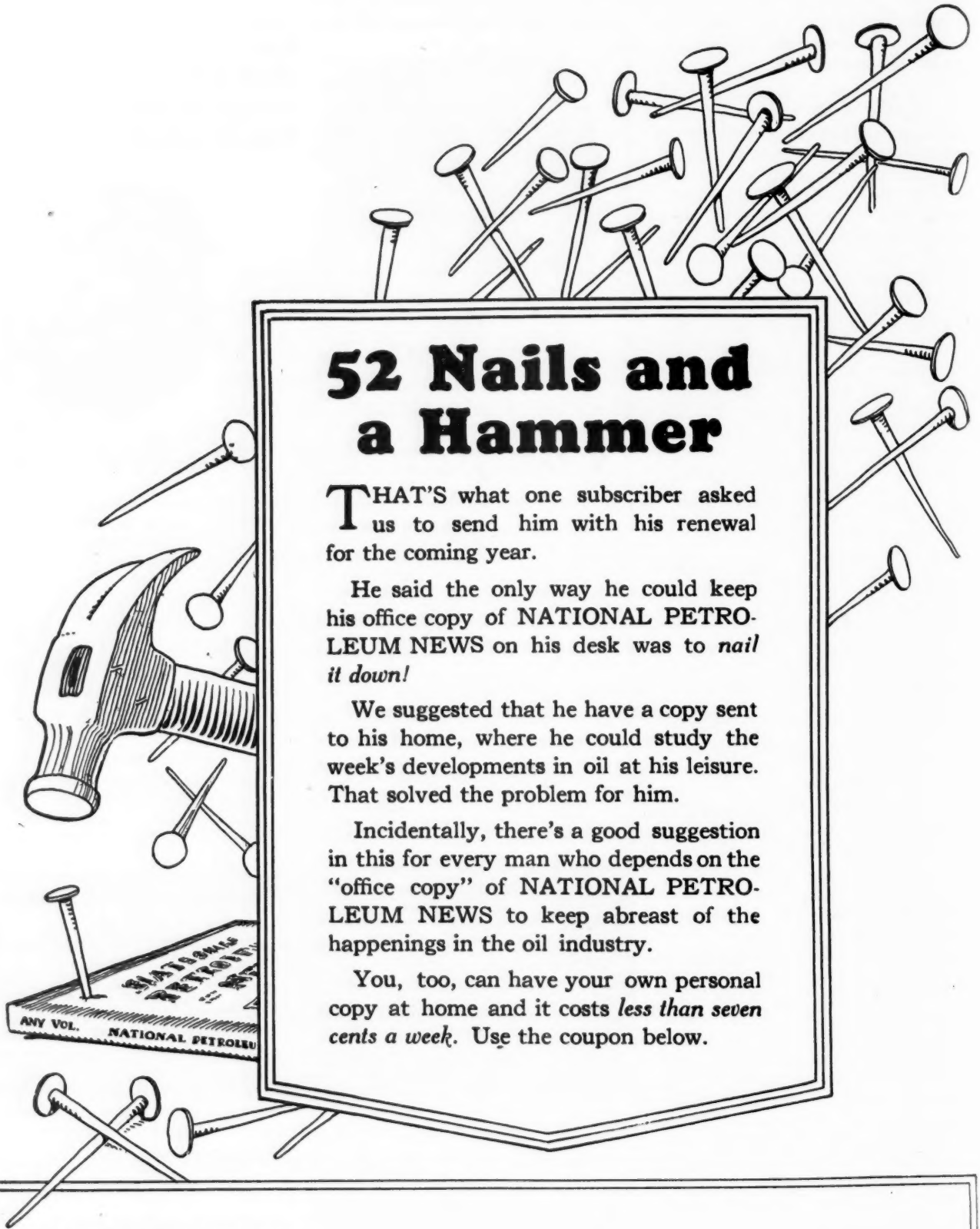

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Cracking Process Can Produce Road Oils To Meet Current Specifications

By Jacque C. Morrell* and Gustav Egloff*

THE results reported herein relate to the production of road oils from the liquid residue of the cracking process. It refers particularly to the production of road oils from the liquid residue of the method of operation of the cracking process referred to as "flashing."

The flashing operation is a process wherein hydrocarbons are withdrawn from the reaction chamber and passed to a vaporizing chamber or zone of reduced pressure. The reduction in pressure causes the vaporization of controlled amounts of the liquid. The oil withdrawn from the vaporizing chamber is referred to as flashed residue. The vaporized hydrocarbon oils are generally returned to the heating zone for further treatment.

One of the results of the flashing operation is the reduction of suspended carbonaceous or pitchy material in the residue. This is quite important in road oil making as well as in the production of a marketable fuel oil.

There are Midcontinent crude oils from which road oils are not made in commercial quantities by ordinary methods. The commercial production of road oils from such crudes, however, may be readily accomplished through the medium of the cracking process. The formation of road oils from paraffin base oils such as those from Pennsylvania may also be accomplished by the cracking process.

The manufacture of road oils by the cracking process from crudes which normally are not suitable for making road oil commercially may be looked upon as a synthetic process. Ordinarily cracking is looked upon as a decomposition or breaking-down process, that is, higher boiling and higher molecular weight hydrocarbons are converted by pyrolysis or thermal decomposition into lower molecular weight and lower boiling hydrocarbons. These reactions are accompanied by dehydrogenation, polymerization, condensation, or a combination thereof, resulting in the formation of hydrocarbons having properties desirable for road oils.

Road oils meeting commercial specifications have been made. As an example, a road oil made from a cracked residue from Montana crude oil is shown below:

Specific Gravity @ 25.0°C. (77°F.)	0.9452
% B. S. (Benzol Dilution)	Trace
% Water	0.07
Flash Point	98.9°C. (210°F.)
Fire Point	129.4°C. (265°F.)
Furol Viscosity @ 40.0°C. (104°F.)	94 sec.
Saybolt viscosity @ 98.9°C. (210°F.)	95 sec.
% Loss @ 162.8°C. (325°F.) for 5 hours	23.4
% Fixed Carbon	4.03
% Total Bitumens by CS_2	99.97
% Bitumen insoluble in petroleum ether	3.56
% Asphalt (100 penetration by steam reduction)	43.94
% Asphalt (100 penetration by fire reduction)	49.6

The above properties correspond to a mixture of heavy, medium and light road oils with the latter predominating when the Illinois State Highway Specifications are considered. These specifications are given here for comparison:

Specification	S[1]	S[2]	S[3]
Grade	Heavy	Medium	Light
Application	Hot	Hot	Cold
	Surface treatment of bituminous or water bound macadam roads		
Water content	None	None	None
Sp. Gr. @ 25.0°C (77°F)	Not less than 0.98	0.96-1.010	0.92-0.97
Flash point	Not less than 150.0°C (302°F)	Not less than 100.0°C (212°F)	.....
Sp. Visc. @ 100.0°C (212°F)	30-70	5-15	30-70
Float Test @ 50.0°C (122°F)	100-200 sec.	30-90 sec. @ 32.2°C. (90°F)	.....
Loss @ 162.8°C (325°F) in 5 hrs.	Not Over 5%	Not Over 5%	20-30%
Float test on residue @ 50.0° C (122°F)	120-240 sec.	90-180 sec.	.....
Total bitumens	Not less than 99.5%	Not less than 99.5%	Not less than 99.5%
Total bitumens insoluble in 86° Be. Naphtha	10-25%	7.0-20.0%	5-20%
Fixed Carbon	7-15%	5-10%	4-16%

While the properties of the road oil prepared from the Montana cracked residuum corresponds to a mixture of the three specifications, any given specifications can be met.

As another example of a road oil prepared from flashed residuum resulting from the cracking of a Mid-Continent fuel oil, the following data is given:

Analysis of Original Flashed Residuum

A.P.I. Gr.°	8.8
Sp. Gr.°	1.008
IBP-EP °F.	273.3°C (524°F)-375.5°C. (708°F)
Flash Point (Cleveland)	157.2°C (315°F)
Fire Point (Open Cup)	198.9°C (390°F)
Furol Visc. @ 50.0°C (122°F)	235 sec.
Flash Point (Pensky-Martens)	146.1°C (295°F)
Cold Test	7.2°C. (45°F)
% B. S. & W. (benzol-centrifuge)	0.3

A.S.T.M. 100 c.c. Distillation

Percent Over	Temp. °C.
5	318.9°C. (606°F)
10	336.6°C. (639°F)
20	356.6°C. (674°F)
30	361.6°C. (683°F)
40	362.2°C. (684°F)
50	360.6°C. (681°F)
60	372.2°C. (702°F)
70	373.2°C. (704°F)
80	375.5°C. (708°F)
E. P.	375.5°C. (708°F)
% Over	81.0
% @300.0°C. (572°F)	2.5
% Coke by Wt.	19.3

*Research Laboratories, Universal Oil Products Co., Chicago.

Never Mind Color

Let's stop calling cracked gasoline "off-color"

Call it yellow or brown or amber Call it 16 or 21 or 25 color—call it anything but "off-color"

We ought to brag about cracked gasoline, not apologize for it, especially if it's Dubbs cracked

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Analysis of Road Oil from Above Flashed Residuum

% Water	None
Specific Gravity	1.008 @ 15.6°C. (60°F)
Flash Point (Cleveland Open Cup)	157.2°C. (315°F)
Engler viscosity @ 50°C. (122°F)	54.2°
Volatilization @ 162.8°C. (325°F) using 20 gms. sample	2.23%
Volatilization @ 162.8°C. (325°F) using 5 gms. sample	1.45%
Solubility in CS_2	99.87%
Insolubility in 86° naphtha	5.29%
Fixed Carbon	5.13%
% of 100 Penetration @ 25°C. (77°F) air blown asphalt	76.2%
Ductility of asphalt 25°C. (77°F)	68 cm.

Wherever desirable to meet particular specifications cracked distillate bottoms corresponding in general in boiling range to a gas oil may be utilized by blending in proper proportions with the cracked residuums.

It has been definitely established that road oils can be made directly by the cracking process.

NEW PATENTS

Prepared by R. E. Burnham, patent and trade-mark attorney, 1343 H Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

March 3, 1931

REFINING

Method for treating petroleum—Warren F. Bleecker, Boulder, Colo. No. 1,794,668.

Separation of oils from mixtures with solid substances—Mathias Pier, Heidelberg, and Rudolf Wietzel and Bruno Engel, Ludwigshafen - on - the - Rhine, Germany, assignors to I. G. Farbenindustrie. No. 1,794,865.

Art of refining hydrocarbons—Frank A. Apgar, Hammond, Ind., assignor to Sinclair Refining Co., New York, N. Y. No. 1,795,067.

Distillation of oil—John E. Bell, Brooklyn, N. Y., assignor to Sinclair Refining Co., New York, N. Y. No. 1,795,070.

Art of refining hydrocarbons—Eugene C. Herthel, Chicago, Ill., assignor to Sinclair Refining Co., New York, N. Y. No. 1,795,124.

Process of converting residues obtained on sweetening petroleum distillates—Herbert G. M. Fischer, Westfield, N. J., assignor to Standard Oil Development Co. No. 1,795,278.

PRODUCTION

Hydraulic core-extractor — Reuben C. Baker, Coalinga, Calif., assignor to Baker Oil Tools, Inc., Huntington Park, Calif. No. 1,794,356.

Apparatus for pumping wells—Arthur F. White, Fullerton, Calif., assignor to Jordan & Taylor, Inc., Los Angeles, Calif. No. 1,794,427.

Apparatus for pumping liquids—Edward R. Wolcott, Los Angeles, Calif. No. 1,794,431.

Hydraulic trip-spear — Frederick Stone, Los Angeles, Calif., assignor to Doheny-Stone Drill Co., same place. No. 1,794,652.

Rotary expanding underreamer—James J. Santiago, Los Angeles, Calif. No. 1,794,735.

Rotary trip-spear—Orda D. Nutter, Parkersburg, W. Va., assignor to Acme Fishing Tool Co., same place. No. 1,794,864.

Motor-control system (for earth drilling)—Laurence M. Perkins, Wilkinsburg, Pa., assignor to Westinghouse Electric & Mfg. Co. No. 1,794,980.

Jarring tool—John F. Stephan, Los Angeles, Calif. No. 1,794,991.

Clamp for derricks—John D. McEwen, Pittsburgh, Pa., assignor to Lee D. Moore & Co., same place. No. 1,795,032.

MISCELLANEOUS

Apparatus for storing fluids (mineral oils) — William G. Laird, New York, N. Y., assignor to Doherty Research Co., same place. No. 1,794,383.

Tank-siphon dispensing apparatus—Hosmer L. Blum, Fort Wayne, Ind., assignor to S. F. Bowser & Co., same place. No. 1,794,437.

Rotary machine (pump)—Paul B. Renfrew, Fort Wayne, Ind., assignor to S. F. Bowser & Co., same place. No. 1,795,040.

March 10, 1931

REFINING

Process of treating hydrocarbon oil with metallic halides—John L. Cooley, Berkeley, Calif., assignor to Standard Oil Co. of California. No. 1,795,761.

Process of and apparatus for treating oils—Charles B. Buerger, Pittsburgh, Pa., assignor to Gulf Refining Co., same place. No. 1,796,138.

PRODUCTION

Rotatable and releaseable fishing-tool with circulation—James B. Triplett, Whittier, Calif. No. 1,795,322.

Underreamer — Samuel L. Highfill, Winfield, Kans., and Robert P. Mays, Cleveland, Ohio; said Mays assignor to Federal Supply & Machine Co., Winfield, Kans. No. 1,795,367.

Underreamer — Samuel L. Highfill, Winfield, Kans., and Robert P. Mays, Cleveland, Ohio; says Mays assignor to Federal Supply & Machine Co., Winfield, Kans. No. 1,795,372.

Rotary pump—Fred I. Getty, Jennings, La. No. 1,795,552.

Offset-cutting tool—Fred I. Getty, Jennings, La. No. 1,795,553.

Internal-casing wrench—Chester A. Rasmussen, Long Beach, Calif. No. 1,795,575.

Rotary drive and draw works—Lee J. Black, Beaumont, Tex. No. 1,795,706.

Well-pumping unit — Reuben C. Baker, Coalinga, Calif., assignor to Baker Oil Tools, Inc., Huntington Park, Calif. No. 1,795,922.

Traveling block — Edgar E. Greve, Bellevue, Pa., assignor to Oil Well Supply Co., Pittsburgh, Pa. No. 1,796,250.

Traveling block—Edgar E. Greve, Bellevue, Pa., assignor to Oil Well Supply Co., Pittsburgh, Pa. No. 1,796,251.

MISCELLANEOUS

Sulfonic lubricating material and process of making same—Herbert L. Johnson, Brooklyn, N. Y., assignor to Standard Oil Development Co. No. 1,795,491.

Slushing grease—Arthur H. Bransky, Chicago, Ill., assignor to Standard Oil Co. of Indiana. No. 1,795,993.

Prevention of evaporation losses—John F. Eakins, Evanston, Ill., assignor to Standard Oil Co. of Indiana. No. 1,796,010.

Bell cap—William J. Seeland, Elizabeth, N. J., assignor to Standard Oil Development Co. No. 1,796,256.

March 17, 1931

REFINING

Process and apparatus for converting petroleum oil—Roy Cross, Kansas City, Mo., assignor to Gasoline Products Co., Wilmington, Del. No. 1,796,507.

Process of refining hydrocarbon oils—Alexander S. Ramage, Detroit, Mich., assignor to Gyro Process Co., same place. No. 1,796,621.

Dehydrating apparatus having preliminary agglomerator—Harold C. Eddy, Los Angeles, Calif., assignor to Petroleum Rectifying Co., same place. No. 1,796,750.

Recovering gasoline—Fred E. Hosmer, Fort Worth, Tex. No. 1,796,755.

Preparation of adsorbent material—Robert E. Manley and Merton L. Langworthy, Port Arthur, Tex., assignors to Texas Co., New York, N. Y. No. 1,796,799.

Method for the resolution of hydrocarbon vapors—Frank A. Howard, Elizabeth, and Nathaniel E. Loomis, Westfield, N. J., assignors to Standard Oil Development Co. No. 1,797,145.

PRODUCTION

Pump—James O. McMillan, Eldorado, Kans., assignor to Oil-O-Matic Mfg. Co., Wichita, Kans. No. 1,796,298.

Internal-combustion pump, (well-flowing device)—Armais Arutunoff, Bartlesville, Okla. No. 1,796,425.

Apparatus for locating leaks (in well-casing)—Paul H. Granger, Los Angeles, Calif. No. 1,796,454.

Ball-valve assembly—Robert W. Gunn and Willsie A. Scott Thompson, Los Angeles, Calif., assignors to Emsco Derrick & Equipment Co., same place. No. 1,796,455.

Special standpipe reeinforcing for derricks—John B. Merritt, Talf, Calif., assignor to Emsco Equipment & Derrick Co., Los Angeles, Calif. No. 1,796,469.

Expanding roller underreamer—James J. Santiago, Los Angeles, Calif. No. 1,796,479.

Earth-coring machine—Frederick Stone, Spokane, Wash., assignor to Doheny-Stone Drill Co., Los Angeles, Calif. No. 1,796,488.

Pipe-gripping means for rotary well-drilling rigs—Lee J. Black, Beaumont, Tex. No. 1,796,500.

Expansible underreamer—Bernard H. Scott, Glendale, Samuel E. Ross, Long Beach, and Neill J. Norris, Santa Fe Springs, Calif. No. 1,796,543.

Expanding rotary underreamer—James B. Triplett, Whittier, Calif. No. 1,796,546.

Apparatus for indicating the flow of sub-surface fluids—Laurence E. Trout, Wichita Falls, Tex. No. 1,796,547.

Rock-bit cone—George S. Hull, Tulsa, Okla. No. 1,796,602.

Deep-well pump—Harry F. Benson, Holyoke, Mass., assignor to Worthington Pump & Machinery Corporation, New York, N. Y. No. 1,796,702.

Elevator for sucker-rods, tubing, etc.—Dudley R. Dale, Toledo, Ohio, assignor to S. M. Jones Co., same place. No. 1,796,779.

Maintaining and increasing flow of failing wells—Frank F. Hill, Los Angeles, Calif., assignor to Union Oil Co., same place. No. 1,796,788.

Core-drill—Harry C. Johansen, Michigan City, Ind., assignor to Sullivan Machinery Co., Claremont, N. H. No. 1,796,950.

Spring hoisting device—Thomas A. Creighton, Long Beach, Calif. No. 1,796,981.

Combination packer and setting tool—Jeddy D. Nixon and Walter L. Church, Houston, Tex. No. 1,797,177.

New Refining Patents

Sweetening Gasoline. U. S. P. 1 791 521. Feb. 10, 1931, application filed Aug. 26, 1925; August P. Bjerregaard.

GASOLINES which have been sweetened with litharge and sodium hydroxide or with sodium hypochlorite, to pass the "doctor" test, tend to discolor and deposit gum when exposed to light. It has now been found that gasoline distillates can be sweetened with respect to the "doctor" test, and at the same time stabilized to light (with respect both to color and gum deposition), by treatment with a small amount of a normal primary alcohol and an alkali.

The preferred alcohol is methanol, because the speed of the action decreases as the molecular weight of the alcohol increases. The preferred alkali is sodium hydroxide, as being most readily available commercially. The alcohol should be practically free from acetone. A previous treatment with sulfuric acid (66° Be.) may be applied, but is not necessary. The amount of alcohol needed is small, 0.1 per cent being sufficient in some cases. The alkali is preferably added in the powdered solid state; or the distillate, containing the alcohol, may be percolated through solid alkali. For some gasolines the amount of alkali may be as small as 0.2 lb. per barrel of gasoline. The treated gasoline is a finished, marketable product.

What is Claimed

Treating dry gasoline by mixing with a high-test alcohol and then with a dry caustic alkali hydroxide, and separating the gasoline-alcohol mixture from the alkali.

* * *

Cracking Hydrocarbons. U. S. P. 1 791 562, Feb. 10, 1931, application filed Nov. 26, 1928 and in Germany Nov. 27, 1927; Fritz Hofmann and Carl Wulff.

IT HAS been found that the halides (fluoride, chloride, bromide, iodide) of boron, or their addition or substitution products, are excellent catalysts for the cracking of heavy oils. They make possible exceptionally high yields of valuable hydrocarbons, with very little loss due to formation of fixed gases and carbon. They have the further advantage, over the halides of aluminum and iron, of being liquid, and sufficiently volatile to permit ready separation of oil from catalyst. Some of the boron halides are even gaseous at atmospheric pressure and temperature.

In the use of the boron halide catalysts, if the oil is cracked in presence of hydrogen or a substance which yields hydrogen, the cracked distillates are characterized by very low sulfur content and relatively high degree of saturation. The new method is applicable to, but not limited to pressure cracking. As an example, 1000 parts of a crude oil boiling above 300° C. are cracked in presence of 5 per cent of boron fluoride at 380° C under 150 atmospheres of hydrogen pressure. This yields about 75 per cent of an oil boiling up to 250° C., and about 15 per cent of a viscous lubricant fraction, both having low sulfur content and high degree of saturation.

What is Claimed

Cracking a hydrocarbon oil in the presence of a halide of boron while adding a gas supplying hydrogen.

* * *

Catalytic Pressure Cracking. U. S. P. 1 791 618, Feb. 10, 1931, application filed Feb. 18, 1922 and renewed Oct. 16, 1928; Gustav Egloff and Jacque C. Morrell, Assignors to Universal Oil Products Co.

THIS invention relates to a means for providing increased yield and improved quality of distillate in the pressure cracking of heavy oils. This result depends largely on the saturation provided by hydrogenation, effected with the aid of a suitable catalyst.

In this improved process, the oil is first passed under pressure through heating coils in a gas-fired furnace. When raised to cracking temperature, the oil is passed into a vaporizing chamber, from which the vapors are led into a dephlegmator for refluxing. The reflux condensate is returned to the heating coils; the dephlegmated vapors go to a catalyst chamber, in which the catalyst may be nickel or the like, on pumice or other suitable carrier. In this chamber normal conditions of a pressure cracking system are maintained, e.g. 400 to 450° F. and a pressure of 300 lb. or more per sq. in.

From the catalyst chamber the vapors pass to a condenser; the uncondensed vapor and fixed gases from this condenser rise to a scrubber, where they are cleansed and purified by sulfuric acid or a like agent, and thence to a chamber containing iron oxide, litharge, caustic soda or other suitable desulfurizing agent. The purified and desulfurized vapors and gases are recycled with the dephlegmated vapors, their function being to assist in the hydrogenation which is effected in the catalyst chamber. The result is a pressure distillate having low sulfur content and relatively high

degree of saturation, obtained in large yield as compared with other pressure cracking processes.

What is Claimed

Heating oil to a cracking temperature, dephlegmating the evolved vapors, subjecting the dephlegmated vapors to a catalytic treatment, condensing the treated vapors and collecting the distillate together with the uncondensed gases, scrubbing and desulfurizing the gases, and finally admitting the desulfurized gases to a stream of dephlegmated vapors entering upon the catalytic treatment.

* * *

Acid Refining. U. S. P. 1 791 941, Feb. 10, 1931, application filed Aug. 30, 1928; Karl T. Steik, Assignor to Standard Oil Development Co.

THE use of strong sulfuric acid in purifying heavy oils has the disadvantage of involving losses due to oxidation, charring and discoloration of the treated oil. A more effective and economical method of acid purification of petroleum oils has been discovered in the use of mixtures of sulfur trioxide and sulfur dioxide. This treatment yields an oil which is better with respect to color and odor, and is much more resistant to emulsification in subsequent treatments, than oils treated by the older sulfuric acid method. . In treating lubricant cuts to produce white oils, the new process has the further advantage of yielding an oil with much improved taste.

In practice, the oil is charged into a closed vessel equipped for agitation and for artificial chilling, and a liquid mixture of sulfur trioxide and sulfur dioxide is added. This mixture may contain about 10 per cent, more or less, of sulfur trioxide. The temperature should be about —10° C.; or if a higher temperature is used, pressure is applied to keep the reagent mixture liquefied. Several successive batch treatments of the same oil are advisable; or a continuous counter-current method may be utilized.

What is Claimed

Agitating oil in a closed vessel with a preformed liquid mixture of sulfur trioxide and sulfur dioxide, settling, removing the sludge, evaporating off sulfur dioxide and liquefying it for reuse.

* * *

Dewaxing Lubricants. U. S. P. 1 792 234, Feb. 10, 1931, application filed April 15, 1927; Robert E. Manley, Assignor to The Texas Co.

THE refrigeration method of dewaxing lubricating oils, as ordinarily practiced, is relatively expensive on account of the very low temperature to which the oil must be chilled to effect an adequate separation of wax. The reason for this low temperature requirement is that the wax includes low-melting components, which approach in properties the oil itself. The presence of these low-melting waxes not only necessitates extreme chilling, but also imparts to the precipitated wax an amorphous character which renders the separation from the oil difficult and inefficient.

These difficulties have now been overcome by a system in which the lower melting waxes are removed by distillation process. The subsequent application of the refrigeration method is thereby rendered more effective, without the necessity of such extreme chilling, so that a considerable saving is made in operating costs. The new process depends on the discovery that the low-melting waxes can be separated from the oil, in spite of the similarity of their properties, by the aid of a suitable selected carrier oil, which is added to the lubricant before the distillation. The carrier oil should be wax-free and of low viscosity; it may be, for example, a light asphalt-base lubricating oil.

In practice, the oil to be dewaxed is thinned with the carrier oil, and distilled till about a third of the total wax content is removed. The residual oil is then deluted with naphtha or the like, and chilled. A temperature of about 25° F. is sufficient for an effective dewaxing of the pretreated oil, to give a product with pour test not exceeding 25° F.

What is Claimed

Separating paraffin wax from lubricating oil by mixing with the oil a suitable more volatile carrier oil, derived from a naphthene base crude and being less volatile than kerosine, and distilling off the carrier oil until the desired quantity of the wax has been removed.

* * *

Stabilizing Lubricants. U. S. P. 1 793 134 and 1 793 135, Feb. 17, 1931, original application filed Aug. 19, 1926; divided and these applications, filed Nov. 7, 1928, and renewed July 31, 1930; Thomas H. Rogers, Assignor to Standard Oil Co. of Indiana.

IN MAKING the highly refined viscous lubricants for turbines and other similar uses, it has been observed that after the removal of asphaltic constituents with fuming sulfuric acid the viscous oils are unstable. They rapidly discolor, become increasingly acid, and acquire more and more tendency to form emulsions.

This defect in lubricants of the specified type has now been practically overcome through the discovery that the oils can be stabilized against discoloration, acid formation and emulsification by a small percentage of beta-naphthol, or of an aromatic polyhydroxy compound. As examples, pronounced stabilizing effects have been obtained with as little as 0.02% of beta-naphthol, 0.002% gallic acid, 0.04% pyrogallol of 0.05% dibutyl-resorcinol. With addition of one of these stabilizers, the oil retains its color and shows little or no increase in acidity or emulsification tendency even under the severe test of exposure to oxygen at 100°C. The stabilized oils have the further advantage of retaining their electrical resistivity to a high degree on aging.

What is Claimed

1 793 134: Preventing acid formation and increase in emulsifiability in highly refined viscous oils, by adding a small proportion of beta-naphthol.

1 793 135: For the same purpose, adding a small proportion of an aromatic compound having a plurality of hydroxy groups attached to the ring.

* * *

Utilizing Petroleum Carbon. U. S. P. 1 793 014, Feb. 17, 1931, application filed April 17, 1928; Richard Lee Rodgers.

FOR the double purpose of utilizing the carbon deposited in cracking and distilling operations, and of providing an outlet for unsalable residual oils accumulating in the refinery, a process has been developed for working the two products up into a dry, solid fuel, which is salable for domestic heating uses.

Petroleum carbon, as such, is not suitable for domestic use; this is particularly true of carbon from cracking stills, which is oily, unclean, sometimes malodorous, and apt to burn with a smoky flame. In the new process, the petroleum carbon is comminuted by any suitable means to a fineness which may vary widely, but is preferably 10 to 50 mesh.

It is then mixed with such a quantity (generally within the range 10 to 25%) of a carbon-yielding petroleum oil as will exercise its carbonizable content as a homogeneous binder of the entire batch. This mixture is carbonized in a retort to yield a dry solid fuel, in salable form. Only neutral petroleum residuums or oils are used as the carbonizable component; such products as acid sludge are not suitable.

The new process permits refiners to adapt their output of this fuel, within the limits between minimum and maximum absorption capacity of the petroleum carbon, and so contributes notably to the flexibility of refinery operation according to market conditions. As an auxiliary process to distillation, it permits heat economies and enables the refiner to recover part of his unsalable residues as salable distillates.

What is Claimed

Producing an artificial fuel from the carbon residue from distilling or cracking petroleum, the residue being reduced to a fineness of 10 to 50 mesh, mixed with a neutral liquid petroleum product and heated to a carbonizing temperature to exercise the carbonizable content as a homogeneous binder of the batch into solid, coherent fuel.

Visiting Around the Refineries

By Arch L. Foster

CONSIDERABLE activity in the development of practicable heavy-oil engines for aircraft has been noted in England during the last few years, and some of the results of this work is observed in the announcement that the British Air Ministry is to produce two new heavy oil engines intended for long range airplanes, where greater engine weight ratio may be compensated by a reduction in fuel weight.

Successful operation of these engines will show that the heavy oil motor has the advantage over the gasoline engine for flights lasting over ten hours duration. One of the engines will use direct-spray injection in the cylinders. The other will employ the sleeve-valve principle with provision for creating air swirl in the cylinders.

The first engine has been completed. It weighs 1450 pounds, and gives steady power at 1900 r.p.m. The other is not yet completed. The weight per horsepower of these engines will be about 3.5 pounds, while the gasoline engine has a ratio of about 2 pounds. Fuel consumption of the compression engine is only about 0.4 pounds per horsepower-hour, and with a comparable gasoline motor it is 0.55 pounds. For long flights the weight of engine and fuel in each case will be about the same.

* * *

AN AGREEMENT has been entered into by the Standard Oil Co., the I. G. Farbenindustrie, and Imperial Chemical Industries to erect a plant in Australia for the manufacture of oil and by-products from coal. The plant will be built at Ellalong, near the Maitland coal fields, in New South Wales.

Six hundred thousand tons of coal will be used annually, according to advices, of which 90 per cent will be converted into motor oil producing thirty million gallons of gasoline annually. The plant will cost approximately $15,000,000, and $100,000 has already been spent in surveying and drilling the 36,000 acres of land which is under consideration. The force to be employed will be approximately 6000 men.

* * *

PROMPTED no doubt by the long-distance transmission of natural gas in this country, developments in Europe are under way to supply manufactured gas, such as coal gas, to cities and industries over a wide area from large manufacturing plants, via pipeline.

One of the largest of these is the Fern-Gas project in Germany, owned by the city of Madgeburg and the Kontinentale Gas Gesellschaft, Gas, made from hard British coal at present, is being piped to Leipzig, and on the west through Dessau and the Harz region to Ilsenburg. Other lines are planned to Wittenberge and eventually the system will supply gas to hundreds of towns, villages, and factories.

The works at Madgeburg, equipped to handle 1000 tons of coal per day, is located near the great brown coal region, but so far the process for making gas from this material has not been developed to a practical commercial proposition. One main gas holder, containing 100,000 cubic meters, (3,531,650 cu. ft.), is already in operation, and more capacity will be added as demands require. Starting the gas from the holder at a pressure of about 10 atmospheres, (147 pounds) it is calculated this pressure will be reduced to three atmospheres (45 pounds) at Leipzig.

* * *

ACCORDING to statements made by a prominent engineer recently, there are three "outs" for the natural gasoline manufacturer under present conditions, and those which will likely obtain for some time in the future:

1. Dilute his unextracted gas with an inert gas to produce a gas of definite standard thermal value, and dispose of this gas for fuel to users, industrial, municipal, or otherwise.

2. Produce motor and aviation fuels, and other special products, solvents, chemical intermediates, etc., and develop markets for them.

3. Go broke.

A satisfactory solution of this problem by each individual executive will no doubt determine whether or not his company will be found in either or both the first two positions, as well as the occupants of the third condition. While we do not believe that any real conditions exist which will populate the third group to any greater extent than is normal in any industry, a proper estimate of the whole situation, arrived at now, combined with aggressive policies based on this estimate, will simplify the situation both for the individual and the entire industry.

* * *

A NUMBER of recent graduates in the Fuel and Gas Engineering School of Massachusetts Institute of Technology have accepted positions with various oil companies and manufacturers of equipment for the oil industry.

Albert H. Wehe has recently joined the staff of the Hydro Engineering and Chemical Co., of Elizabeth, New Jersey.

Albert L. Eigenbrot is employed by the M. W. Kellogg Co., of New York, well-known manufacturers of refinery and power plant equipment.

David M. Gordon has entered the south American service of the Standard Oil Co. of New Jersey.

Foreign Production of Natural Gasoline Is Growing

THE world production of natural gasoline increased from 41,470,069 barrels in 1927 to 58,200,357 barrels in 1929, a gain of 16,730,288 barrels, or 40 per cent, according to the United States Bureau of Mines, Department of Commerce, following the completion of a survey conducted by E. B. Swanson, Chief Petroleum Economist, through which the first complete quantitative data on natural gasoline production and utilization in foreign countries have been assembled.

This survey was inaugurated during the past year at the request of a number of American oil companies to supplement current data on the domestic production of natural gasoline and world production of crude petroleum. Information was assembled from official publications of foreign governments; through the co-operation of consular and commercial representatives in various foreign countries; and through the assistance of a number of companies operating in foreign countries.

During the period covered by the survey, United States production accounted for more than 90 per cent of the world total, but the output of foreign plants formed an increasing proportion of the total, advancing from 5.8 per cent of the total in 1927 to 8.6 per cent in 1929. The relative proportions of domestic and foreign production of natural gasoline are shown in table 1.

Of the 1929 production of 5,017,309 barrels reported for foreign countries, approximately 2,000,000 barrels were mixed with crude and transported from producing properties, the quantity of natural gasoline production being included in the figures of crude oil production, while the remaining quantity was transported separately, either by pipeline, tanker, or tank car, to refineries for blending with naphthas in the production of motor fuel.

Aside from the United States, natural gasoline production was reported for 16 countries, Netherland East Indies, Peru, Persia, Rumania, Russia (U.S.S.R.), Poland, Colombia, Venezuela, Argentina, British India, Japan and Taiwan, British Borneo, Egypt, Mexico and Trinidad.

A limited production was reported for Canada in 1927 and 1928 but none for 1929. Among the countries to which inquiries were sent and which reported that no natural gasoline was being produced were Brazil, Czechoslovakia, Ecuador, Estonia, France, Germany, and Italy. It was reported also that a small quantity of natural gasoline had been produced in Australia, but not to the extent of a commercial operation.

Of the production reported for the Netherland East Indies during 1929, approximately 600,000 barrels were mixed with crude and the balance transported to refineries for blending in the production of motor fuel. All of the production reported for Peru was transported by pipeline to Talara for blending with the gasoline produced at the refinery. Of the 1929 output of 726,190 barrels, 643,214 barrels was reported as the production of gasoline plants at La Brea and Parinas and 82,976 barrels from Lobitos.

All of the Persian production is blended with crude in the field and transported by pipeline to the Abadan refinery, the natural gasoline being included in the annual reports of crude oil production. In Rumania, Russia and Poland natural gasoline is handled almost entirely apart from crude oil and the output is not included with crude oil production.

All of the Colombian production and virtually all of that in Venezuela is mixed with crude oil and included in the figures of crude oil production. The Argentine production is shipped

Table 1

Domestic and Foreign Production of Natural Gasoline

	1927		1928		1929	
	Barrels	Per Cent	Barrels	Per Cent	Barrels	Per Cent
United States	39,074,857	94.2	43,191,286	91.9	53,183,048	91.4
Foreign	2,396,212	5.8	3,832,265	8.1	5,017,309	8.6
Total	41,470,069	100.0	47,023,551	100.0	58,200,357	100.0

Table 2

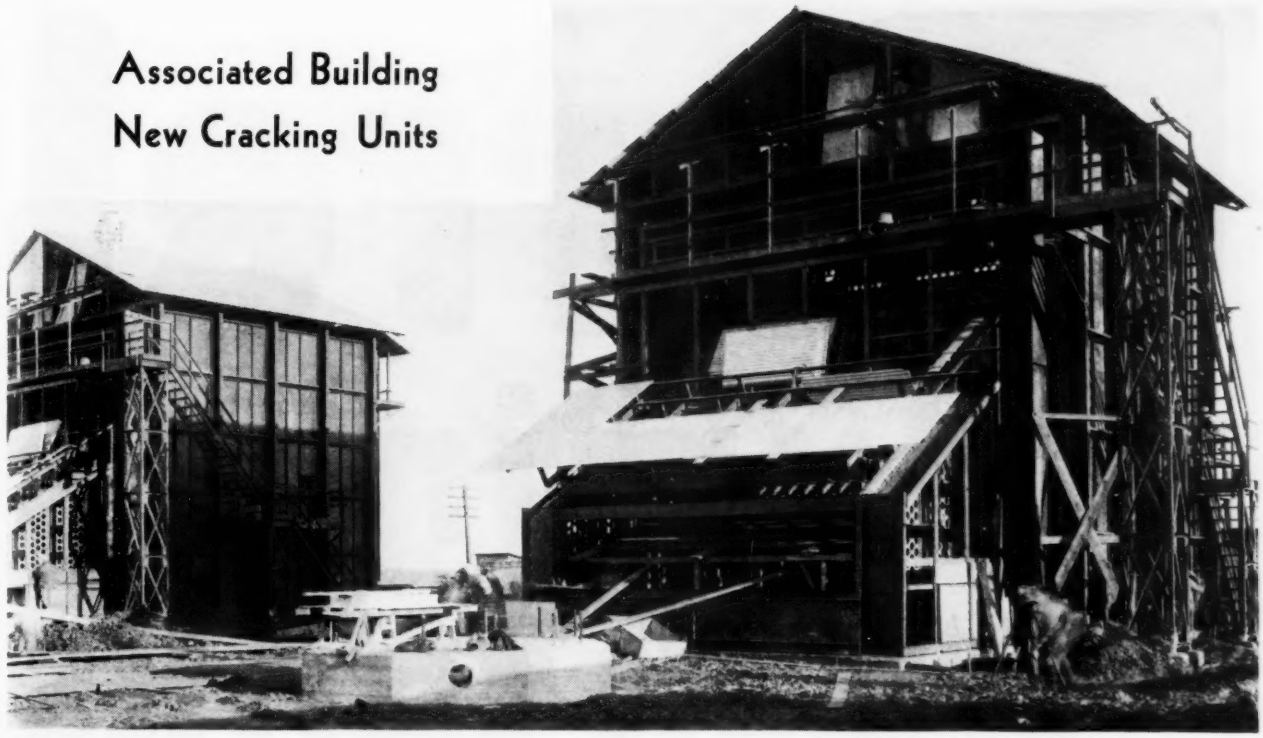
World Production of Natural Gasoline, 1927-1929

(Figures in Barrels of 42 Gallons Each)

Country	1927	1928	1929
United States	39,074,857	43,191,286	53,183,048
Netherland East Indies	779,143	1,062,160	1,333,926
Peru	415,555	641,424	726,190
Persia	190,105	460,305	696,730
Rumania	167,000	286,000	476,000
Russia	185,800	233,000	361,000
Poland	263,948	302,623	327,798
Colombia	77,505	244,850	329,358
Venezuela	83,520	250,914	311,764
Argentina	20,974	82,372	142,311
India, British	79,704	104,797	99,888
Japan	67,798	67,492	77,324
British Borneo (Sarawak)	22,678	48,732	76,235
Egypt	16,855	21,498	21,162
Mexico	13,461	12,886	18,759
Taiwan (Formosa)	5,026	13,036	15,000
Trinidad	.....	.....	3,864
Canada	6,140	176	.....
	41,470,069	47,023,551	58,200,357

ADVERTISING PAGES REMOVED

Associated Building New Cracking Units



The above picture shows the rapid progress being made in the erection of the furnaces of the new Tube and Tank Checking plant for the Associated Oil Company at Avon, California

This plant will have a fuel oil charging capacity of ten thousand barrels daily. The foundations for the furnaces were started in the early part of December, 1930, and it is expected the entire installation, which will be the largest single unit of its kind in the world, will be completed and in Operation June 1, 1931

Progress is also being made on the erection of tanks, treating plant, power plant, re-run stills and all other equipment which is necessary to provide for a complete cracking refinery, and involves an expenditure of approximately two million dollars

---

by rail or boat to refineries and is not included in the crude oil production figures. In British India, some portion of the natural gasoline output is handled separately by pipeline and the remainder is turned into crude oil pipelines and included with the crude oil production.

The Japanese production, as well as that in Taiwan, is handled separately from the crude oil production. The natural gasoline produced in Sarawak is transported by pipeline to the refinery but the production is included in the crude oil production reported. All of the Egyptian production is mixed with crude oil at Hurghada and shipped to the refinery at Suez. The Mexican production is handled apart from the crude oil production. Of the 3864 barrels reported for Trinidad, 3085 barrels were mixed with crude and 779 barrels marketed directly as motor fuel.

NEW EQUIPMENT

C. J. Tagliabue Mfg. Co., Park and Nostrand Aves., Brooklyn, N. Y., maker of instruments for indicating, recording and controlling at refineries, has developed an improved level indicator in which are incorporated electric contacts for operating signal lights in the control house. Sealed mercury contacts are used. These contacts, the company points out, must be kept at a certain distance from the flange face so as not to be affected or destroyed by high temperature at the flange.

The tilt switch holding the mercury bottle is pivoted on the end of a bracket so that it is more than a foot away from the flange. The movement of the float after being suitably reduced operates a rocker-arm on the spindle and the motion of the rocker-arm is communicated to the mercury tilt switch by a long connecting link or rod.

All electrical connections and wires are well protected from accidental injury and from rain or other moisture. The stuffing box at the flange end is packed with high temperature resistant material.

* * *

M. H. Detrick and Co., 140 S. Dearborn St., Chicago, has issued a profusely illustrated catalog, presenting its line of refractory archs and walls.

To the oil refiner the chapter on boiler furnaces and that on tube stills and the structure of furnaces for the latter will be of especial interest. Designs for arranging radiant sections, arches and other details of construction are outlined in graphs and drawings with photographs to show specific installations. Designs of forms of brick and refractory tile for every purpose are illustrated, and the suspension bars employed for construction of different types of walls and arches are discussed and illustrated.

Farrell aluminum truck tanks

**** "Aluminum will pay for itself as a material for truck and trailer tanks when it is used for the purpose of increasing payload where weight limit is a factor"* *** **Correct—but that's not all—*Aluminum tanks must be specially designed and engineered* — revamped steel plans will not do!**

Aluminum has many possibilities—its future is great and uses many—its success depends on proper application, correct designing and engineered construction.

As the aeroplane marks the modern advancement in fast travel—an epoch of new service, greater profit of unestimable value to industry and world progress ***commences with the adaptation of aluminum.***

Farrell was quick to recognize the value of aluminum—among the pioneers of its use—Farrell foresaw the necessity of special designing and engineering—Farrell forecast, months ago, aluminum's possibilities and limitations and today the correctness of Farrell's ideas and engineering is attested to by outstanding engineers.

Building the first aluminum tanks—a history making job—Petroleum Automotive Engineers working with the experienced Farrell organization developed ideas and designs—within the vast Farrell plant engineers cooperated to build and perfect aluminum tanks. Tests of all kinds were made.

It was no one man job—oil company transport engineers—Aluminum Co. of America research and design engineers—automotive truck and trailer engineers—Farrell's skilled construction engineers all started at the bottom and created a ***new design*** especially adapted to the properties of aluminum.

The result was—***proper engineering—maximum rigidity—unusual strength—extreme sturdiness—pleasing lines—low weight factor per gallon—greatly increased payload capacity.***

Since that first tank, many Farrell ***aluminum*** jobs have been built—each adapted to increasing payload capacity of the chassis—Farrell ***aluminum*** tanks now in use have proven themselves money makers beyond their estimated calculations. Payload capacities have been increased up to 24% over equal weight steel tanks.

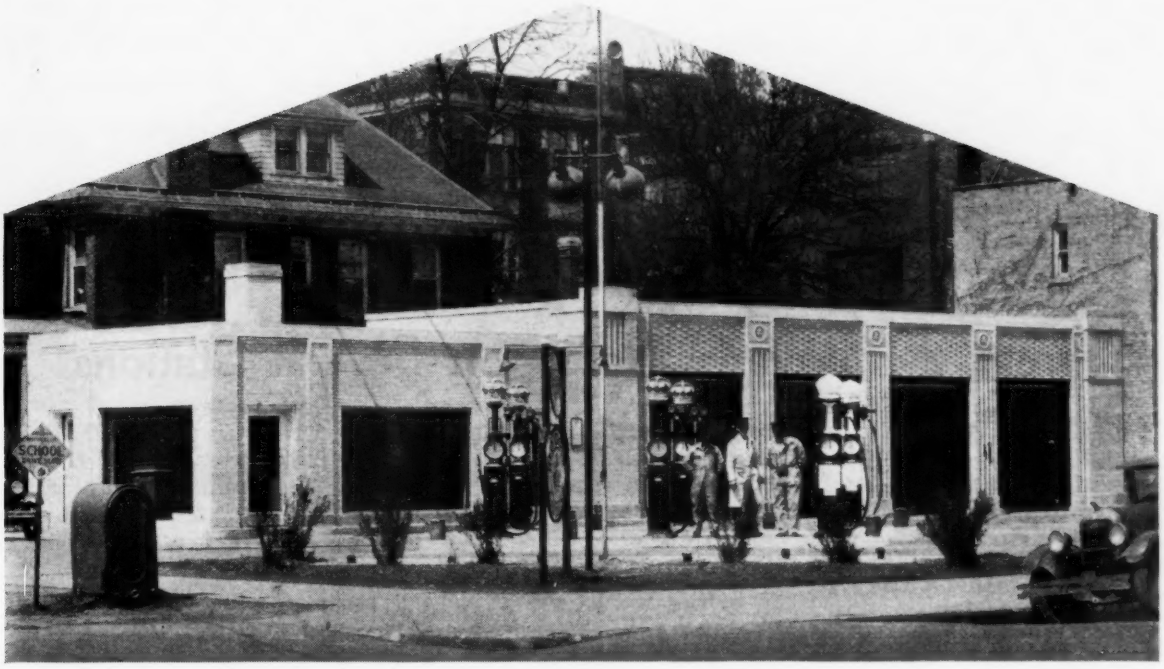
The purpose of this advertisement is twofold—***first,*** if you need or feel you can use aluminum tanks to a profit, Farrell is equipped to cooperate with special engineering and construction service—***second,*** to point out that Farrell is an engineering truck tank builder with capacity large enough, skilled personnel and experience sufficient to undertake any truck or trailer tank building job regardless of quantity, size, standard or special.

Those who can, we invite and suggest a visit to the Farrell plant at Joliet, Illinois—to others we ask that you write for "picture folder" showing some of the many Farrell designs—***let Farrell build your next tank.***

FARRELL MANUFACTURING COMPANY

Joliet - Illinois

Chicago - Detroit - Cleveland - Philadelphia - New York



Four-pit lubritorium and service station of a standard type which Standard Oil Co. of Indiana built last year in its territory. This station is in downtown South Bend, Ind. All the lubrication equipment is modern. The pressure guns are air-operated. Gear oil is dispensed from buckets with hand-operated pumps. Motor oils are kept in a battery of tall rectangular tanks back of the pits. Notice the absence of advertising signs on the building

«Grease It, Please!»

Indianapolis Lubritoriums Know Their Fords

Survey Fails to Uncover Any Points Missed

Article 2

INDIANAPOLIS

INDIANAPOLIS lubrication station attendants know their Fords. The NATIONAL PETROLEUM NEWS Buyer who conducted the survey of gasoline selling in several cities will attest to this.

He took a train to Indianapolis and there rented cars to check the lubrication work done by oil company and car dealer service stations. But he encountered difficulties that precluded as representative a check of service as he had made in Cleveland. The two rental agencies in Indiana's capital didn't afford as wide a variety of cars as the Buyer desired. He was able to get only Fords and Buicks.

In spite of this limitation, the Buyer visited nine oil company stations and two car dealer stations—one Ford dealer and one Buick dealer.

No lubrication points were missed by any of the stations of either oil companies or car dealers, and the work was very well done, he has reported.

THE first article on the survey of greasing conducted by NATIONAL PETROLEUM NEWS to determine how this work was done at oil company stations, as compared with the automobile agencies, appeared in March 25 issue of NATIONAL PETROLEUM NEWS.

Prices varied a great deal with different stations, running from 50 cents at some stations for a Ford to $1.50 for the larger passenger cars. The Standard Oil Co. of Indiana, for example, has three prices—75 cents, $1, and $1.50—for different sizes of cars. It posts these prices, with the names of the cars in each classification, prominently on its lubritorium walls.

The Buyer was greatly surprised at the number of stations that had pits. He found only one lift at the 11 stations visited. The one lift was at a car dealer's station. One of the

car dealer's stations greased the car on the floor.

There was little free service volunteered at the stations. One charged extra for spraying the springs and putting water in the battery.

The lubrication work rated fairly well although several of the stations seemed to be handicapped with inadequate equipment. One station that charged 75 cents, the Buyer said, did a better job than other stations that charged more.

The average time spent on the cars was 37 minutes, the same time average as in calls on 19 Cleveland stations.

Six of the oil company stations used power-operated pressure guns and three manually operated guns. One of the car dealer stations had a power pressure outfit and the other manual guns.

Herewith are the Buyer's observations of some of the stations and the work done in them.

From the Buyer's Notes on Several Stations

THE first station I saw and entered was operated by a large oil company and located in the downtown section of Indianapolis.

The grease pit was located just off the drive. As it was continually exposed to the weather it had changed from what had once been white to a dingy gray.

There were several cans of grease in the pit and I noticed there was no power pressure system.

The attendant was very quick in coming to the car and was quite cordial.

The lack of proper equipment at this station was very noticeable. The attendant brought out one grease gun, a can of gun grease and a can of cup grease. Both cans were battered and old.

There was no equipment for spraying the springs. I mentioned this and the attendant replied by saying that his company had several super-service stations in town where they had equipment for everything.

The station man worked quickly in spite of the fact that he was interrupted five or six times by customers who wanted gasoline. Then too he had to go back and forth between the station and the pits for various tools. I was much impressed with the courtesy of the man and the really good job he did in spite of the appearance of the station and the obsolete equipment he had to work with.

All questions I asked were answered willingly and intelligently.

The car was a Buick and the total time for the job was 35 minutes.

There were no extra services rendered such as wiping the windows, cleaning the inside, etc. The station agent did check the tires and asked if I wanted the water in the battery looked at.

The charge was $1.25. The attendant explained that the company had a standard rate for each type of automobile.

As I left the station I felt as though the attendant had been misplaced. His work deserved a much better station and newer equipment.

I feel quite sure that he did not have time enough to tidy the place up.

* * *

ONE of the oil companies whose products are popular in Indianapolis has a very large building in which many car services are available. The building is situated downtown and has much storage space in addition to that occupied by the different departments.

I drove into the greasing department, or lubritorium. The cars to be greased are driven over pits and lined up in tandem. There are six pits and there is room enough for three cars over each pit.

The idea is a good one for men who wish to leave their cars there and go to the office and forget about them. The cars can be greased at leisure and then sent to another part of the building and stored.

For myself, however, the pits were a nuisance. No sooner would the man taking care of my car get started than he would have to drive the car off the pit and let the car ahead of it off or put another on the pit that would not have to be greased until later in the day.

The car I took to the pit was a Ford. It offered no difficulties. No effort was made to check the water, the air in the tires, clean the inside of the car or the windows. The job took 40 minutes.

One pint of gear oil was put into the transmission. I was asked if I wanted the springs sprayed and the battery looked at. I told them I did.

When the bill for the job was presented to me it was $1.65.

The charge for the greasing was $1 and the rest was for the pint of gear oil, spraying the springs, and putting water in the battery.

* * *

A FORD agency station gave me a very good job. Hand guns were used on all fittings. The attendant knew what he was doing and was careful not to get an excess of grease on the fitting so that it would drop off and make a messy appearance.

All of the parts were wiped clean before the grease was injected.

All hinges and latches were oiled thoroughly and wiped well so that no oil fell on the body.

The job took 30 minutes. Nothing was done to the windows or the inside of the car. I do not count this against the attendant at this station as the car was spotless when I brought it in. I would have appreciated it, however, if the water had been looked at.

As I was leaving an attendant who was standing beside a pump which I had to pass asked me if the gasoline was O.K.

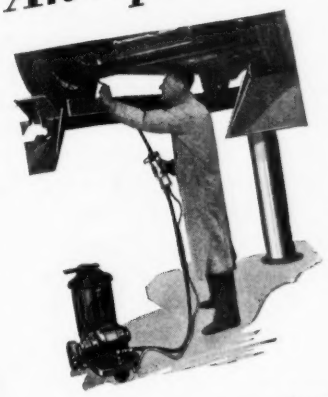
The job cost $1. The general appearance of the servicing department left a good impression.

* * *

AN EXCELLENT job was done at a station in a busy part of town. The station had a pit and the guns were of the power pressure type.

It was hard for me to check all the fittings, as the car was

An Open Book of U. S. Achievements



SOMETHING HAPPENED in an automotive service station several years ago. The operator of the grease rack dropped his unwieldy hand gun forever. The impatient motorist at the grease rack with his watch in his hand, stopped pacing the floor. *The first all electric grease gun was wheeled into its first Lubritorium.*

It was the U. S. Electric High Pressure Grease Gun.

The scene was duplicated hundreds of times within the next few months—thousands of times within the next year. How this new U. S. achievement with its exceptional speed and practicability became the world's fastest selling grease gun is current history.

Now—U. S. has refined this epoch-making unit to 1931 standards of perfection. The new and improved U. S. Electric High Pressure Grease Gun making its appearance in January of this year is more compactly mounted beside the motor on a lower truck, for even greater portability. Pistons, valves, and valve seats are constructed of Nitroloy German steel, making these parts almost impervious to wear. The grease container is now 25 lbs. capacity to minimize refilling.

These newest features are only a few of many. The coupon will bring you the rest.

U.S. AIR COMPRESSOR COMPANY

5314 Harvard Avenue · Cleveland, Ohio

West Coast Branch: **433 West Pico Street, Los Angeles, Calif.**

U. S. AIR COMPRESSOR COMPANY
5314 Harvard Ave., Cleveland, Ohio
Please send me your latest catalog. I am interested in

—Full Hydraulic Car Lifts —Air Compressors
—Paint Spray Units —Grease Guns —Car Washers

Name _____

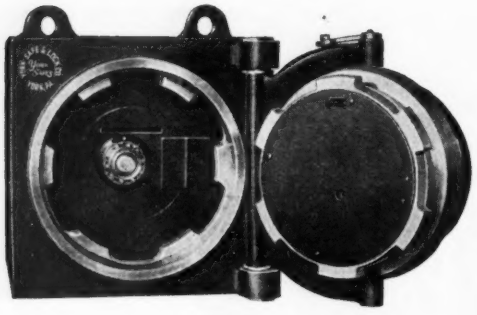
Address _____

City _____

Manufacturers of Air Compressors, Paint Spray Units, Car Washers, High Pressure Grease Guns, and Full Hydraulic Car Lifts

PROTECTION
FROM HOLD-UPS AS WELL AS BURGLARS

THE York Round Door Chest is not only thoroughly burglar proof. When desired, it may also be provided with an ingenious additional protection against the activities of bandits and hold-up men—the "Hold-up Partition". As a surplus of money is accumulated over the average amount for making change, it is slipped into the interior through the slot shown in the illustration. The operation of the inner door, however, is in the hands of an executive or trusted employe who collects the money at suitable intervals. The "Hold-up Partition" thus offers a disconcerting obstruction to bandits who attempt raids during business hours.



The York Chest, when installed, is anchored in a solid concrete block, giving complete protection against fire. It cannot be removed from the building or attacked at any point except the heavy, thief-proof door. The saving in burglary insurance alone will pay for the York Chest in a reasonable length of time.

YORK SAFES

Illustrated folder describing the York Round Door Chest in detail will be sent gladly on request. Write for it today.

YORK SAFE & LOCK CO.

York, Pennsylvania

"Burning Liquid Fuel"

LEARN real facts which have never been published before on the subject of burning liquid fuel, by W. N. Best, the recognized authority.

Send your order and check for $4 to—

National Petroleum News
1213 W. 3rd Street Cleveland, Ohio

on a pit. I did not want to climb down the ladder that would lead me under the car as it was very greasy. I am sure, however, that nothing was missed for the men were intelligent and seemed to know their work well.

The car I had driven to the rack was a new Buick. The job took 35 minutes with two men working on it.

I thoroughly appreciated the fact that the windows were cleaned, the inside vacuumed, air was put in the tires, and the water in the battery checked without being asked if I wanted it done.

The charge at this station was $1 and it was a real $1's worth of service.

* * *

ONE service station man stood out above all the rest. I visited the station where he was at a busy hour, 5:30 p.m.

I drove a Ford over a pit and then climbed out to watch the work of the two attendants.

One man started jacking the front wheels up. He explained that one of the shackles was frozen and he had to relieve the strain from it before he could get the grease through. He added that he always got the grease through every place that it should go through if he had to stay with it all night.

When I asked if the grease he used would wash off in wet weather he took some of it between his fingers and showed it to me. He asked me to notice the stringy condition of it. He said that this made it adhere much better and formed a better medium for lubrication than any other oil.

Both men worked quickly in spite of the fact that the shackles were in bad condition. They changed guns frequently, both manual and pressure. The car was finished in 35 minutes.

They were careful to get the clutch throw-out bearing.

When I was backing the car out one of the men said that if I liked the grease job to tell my friends and if I didn't like it to come back and tell him. He said that he was sure that it would prove to be the best grease job I had ever had.

ADVERTISING PAGES REMOVED

A Salesman For Each Station

By E. L. Barringer
N. P. N. STAFF WRITER

A Joseph H. Walsh one-stop station in Jacksonville. One man is on the street all the time soliciting business for this station

JACKSONVILLE, FLA. A FREE lance salesman for each of his three one-stop service stations in Jacksonville is Joseph H. Walsh's method of merchandising.

The salesman seeks business from all the commercial accounts in the natural marketing territory of his station. He calls on each firm at least once every two weeks.

Tire prospects among individual car owners are followed up also by the salesman, from tips turned in by attendants at the station.

Two of the Walsh stations have a complete line of one-stop service: gasoline, oil, lubrication, washing, tires and repairing, accessories, batteries and repairing, and brake and wheel servicing. Mr. Walsh built these stations.

The other station has all of these departments excepting brake and wheel service. This station is leased from the Standard Oil Co.

Mr. Walsh started in the automotive field years ago as a distributor for a tire manufacturer. With the changing merchandising set-up of tires he has withdrawn from jobbing and several years ago became a retailer with these three one-stop stations.

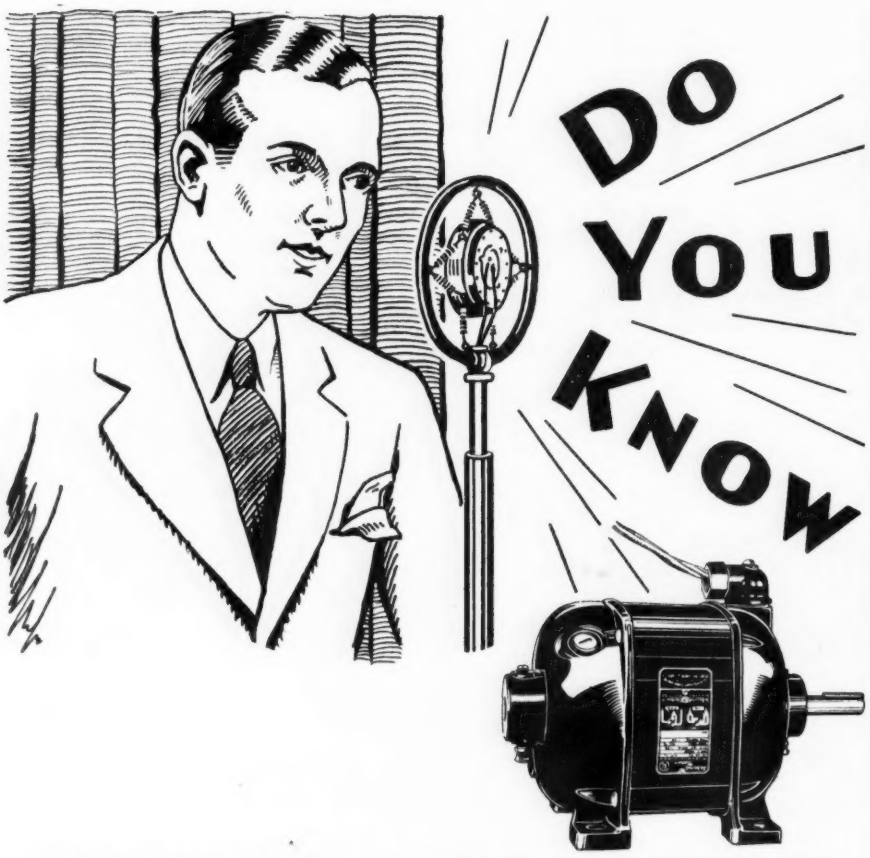
The manager of each station is its salesman. At the two stations built by Mr. Walsh the managers devote all their time to soliciting accounts. At the leased station the manager alternates with the assistant, so there is always one man at the station and one on the street.

The salesman is selling his entire line of merchandise and service to the commercial accounts in his territory but he pushes tires to build up volume in order to earn the biggest annual discount possible.

At this time the task of selling tires to commercial accounts is especially difficult. Many firms in Jacksonville have enough tires in their garages to supply trucks through 1931, having purchased when the tire companies offered attractive discounts last fall.

While the managers are on the street looking after the commercial account customers the attendants back at the station are on the look out for sales among the individual car owners.

When an attendant has a customer in need of tires he tries to get the driver to purchase while in the station. If the sale is not completed the attendant notes the reason, and if the customer will be in the mood to buy at some later date. This information is turned over



THAT there are more than 300,000 Leland vapor-resisting motors now serving the gasoline dispensing industry!

—that they surpass in safety features the rigid requirements of the Underwriters' Laboratories!

—that there never has been one single serious accident attributed to any of these motors!

So much for the first essential—**SAFETY.**

As for unfailing service—consult the pump builders and the oil companies that specify Leland motors. They know—will be glad to inform you.

Send your inquiry to Dayton

A. C. Repulsion Induction D. C. Compound Wound A. C. Polyphase
Interchangeable frames

The Leland Electric Co.
Dayton · Ohio · U·S·A

Leland Electric Canada, Ltd., 7-9 Duke St., Toronto, Ont., Can.

Cable address: "Lelect" Dayton

Leland
Vapor·Resisting
Motors

to the salesman each morning, to be followed up at the correct time.

In locating his stations Mr. Walsh has avoided the business district. A congested area, he believes, is unfavorable for a one-stop station on account of the density of traffic, and the difficulties of turning into the station.

His formula for station location is the right corner on a through street on the border of the business district. This location will catch the customer as he is driving into or out of the congested area, and he has an opportunity to turn into the station.

There are three distinctive features to the Joseph H. Walsh stations. These have been incorporated in the two stations that he built.

The first is the canopy, 15 feet high. The architect campaigned for a lower canopy but in spite of the additional cost Mr. Walsh held out for the 15-foot ceilings.

The high canopies give the station the appearance of height and permit plenty of light back in the sales and work rooms.

The second feature was used in one of the stations. This is having half the side of the show room fronting the drive a series of doors. While the station is open these doors are folded back so the room is exposed to the drive.

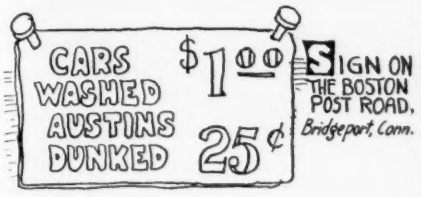
On account of the climate the heating of a station in winter is no consideration in design, so Mr. Walsh decided that having the show room display of tires, batteries and accessories as open as possible was good merchandising.

And the third feature, of which Mr. Walsh is quite proud, is the women's rest room.

The rooms at each station are furnished with wicker chairs and small davenport, a mirror and small table, and a rug. Mr. Walsh demands that these rooms be kept clean.

"When I used to travel around the country I found so many dirty rest rooms in service stations," said Mr. Walsh, "so I decided that if I ever owned a station of my own it was going to have clean rest rooms above everything else."

On The Lazy Bench



"How did you enjoy your trip south, Mrs. Astorgilt?"

"Not very well. During my entire visit the damp airs annoyed me terribly."

"Quite strange, I'm sure. The fruit never seemed to bother me."

—The Gas Line
West Penn Oil Co.

* * *

"I understand this car has a front-wheel drive."

"Yes, they had to get it away from these back seat drivers."

—Our Sun
Sun Oil Co.

* * *

I do not ask for my modest abode
A glen or a sylvan scene.
I would live in a house by the side of the road
And peddle gasoline.

—The Diamond
Mid-Continent Petroleum Corp.

* * *

It's All in the Family

Visitor (speaking of small boy)—"He has his mother's eyes."

Mother—"And his father's mouth."

Small Boy—"And my brother's pants."

—The Unloading Rack
A. Y. McDonald Mfg. Co.

* * *

Parson: "Does your daughter trust in God, Brother Jones?"

Brother Jones: "She must, judging by the company she keeps."

—The Gas Line
West Penn Oil Co.

* * *

Rough Riding

Pauline: "Oh, look at the poor old man all bent over with rheumatism."

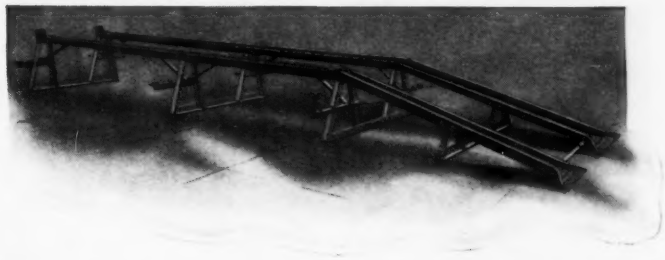
Paul: "Rheumatism, my eye! It's Jack coming back from a ride in a rumble seat."

—Our Sun
Sun Oil Co.

COMPLETE BULK PLANTS
STORAGE TANKS
UNDERGROUND TANKS
LOADING CANOPIES

FILLING STATION BUILDINGS
GREASE RACKS
BRASS VALVES

AIR COMPRESSORS
GASOLINE PUMPS
STEEL BUILDINGS
TANK PAINT
GENERAL PLATE WORK



AUTOMOBILE GREASE RACK

Leading oil companies are distributing these Birtank racks to their filling station operators, for greasing, doping, crank-case draining and washing. They are popular because of their neat, clean appearance, rugged strength . . . and the extra profits they produce.

This Birtank rack is low in cost, can not become oil soaked, never gets slippery, eliminates fire hazard, does not rot or decay, is easily assembled by unskilled labor. Garages and repair shops use these racks also for mechanical work.

Write for additional information and prices.

Sales Offices: Birmingham, Tulsa, Tampa, Charlotte, Verona, Pa., New York, Atlanta, New Orleans, Jackson, Miss.

Birtanks Are The Standard Of Quality

BIRMINGHAM TANK COMPANY
PLANTS: Birmingham, Ala.
Verona, Pa. (Pittsburgh Dist.)

AN INGALLS BIRTANK PRODUCT

Birmingham Tank
OIL & GASOLINE DISTRIBUTION EQUIPMENT

HIGH GRADE PETROLEUM PRODUCTS
Made by the Oldest Pennsylvania Oil Refiners

CYLINDER STOCKS, (Filtered and Unfiltered).
MOTOR OILS—to match any specification.
High Grade Burning Oils.
300° Mineral Seal and Railroad Oils.
High Grade Transformer Oils.

A. D. MILLER SONS' COMPANY
PITTSBURGH, PA.

ARE YOU GETTING YOUR SHARE ★ OF REPEAT BUSINESS

IF not, then the other fellow is getting this business that should be yours. Here's a pointer that will make regular customers from casual buyers. *Blend oils so much better than your competitor that motorists will demand yours* . . . and you can do it with—TP—Bright Stocks. They are 100% straight-run and made from pure paraffine base crude.

—TP—Bright Stocks are contact filtered and dewaxed by centrifuges. 80-85; 120-125; 150-160 at 210° F; all with the same low pour test of 20° F. maximum. —TP—Blended Oils will be made to your specifications on any S.A.E. viscosity numbers.

★

—TP— was the first to offer zero pour test Bright Stocks to jobbers and blenders. The zero pour test is positive proof the oils are completely dewaxed.

Write, wire or phone for quotations.
"A Quart — a Barrel or Tankcar."

TEXAS PACIFIC COAL AND OIL COMPANY

FORT WORTH TEXAS

Biloxi for Pleasure, But Fishing Fleets Mean Oil Sales

By E. L. Barringer
N. P. N. STAFF WRITER

BILOXI, MISS.

BILOXI may have its reputation as a resort city along the Gulf of Mexico but to our industry it has a commercial side of fishing fleets and pleasure yachts that consume substantial amounts of motor fuel and lubricants.

Within a few hundred feet of the highway along the sea wall these boats dock to take on their oil supplies. The principal petroleum customer from the middle of August into May is the fishing fleet. Then, when the fishing season is over for the summer months, the pleasure yachts are the oil consumers.

The fishing fleet consists of about 1500 boats. About 60 per cent are owned and operated by individual fishermen. The others are operated by companies canning shrimp, oysters, crab meat and Gulf fish.

The annual average gasoline consumption by a fishing boat is 2000 gallons. The estimate is made by J. B. and John D. Baltar, operating the oil business started by their father, W. W. Baltar. Besides this amount of gasoline the boat will average about 150 gallons of lubricating oil and 30 pounds of cup grease over the year, and a little kerosine.

Gasoline is placed on the fishing boats in drums. Pleasure yachts buy gasoline from the pump on the dock, but about 85 per cent of the Baltar company's gasoline sales are in the 55-gallon drums.

Empty drums are shipped by boat to New Orleans for filling, and returned by water also. From the oil company's warehouse on the water front the drums are rolled to the dock and lifted by a derrick onto the fishing boats.

The opening day of the fishing season in the fall is a busy time around the oil wharfs. Boats are lined up to take on supplies, and the Baltar company sells about 20,000 gallons of gasoline on this day.

After the first day's rush the average load of oil supplies taken on by a fishing boat is 220 gallons of gasoline, seven gallons of motor oil and a five-pound can of grease as needed. Kerosine is sold mainly in bulk, two-gallons to a sale, and is used on the boat for lamps and for starting fires.

Some of the boats return to Biloxi with each catch, take on supplies, and return to the fishing waters. But some boats stay out for about 30 days. These fishing boats are serviced by freighters — boats plying between land and fishing waters carrying out supplies and returning with the catch.

Since a vessel is responsible for its own debts the oil company is protected on credit sales to individual boat operators. As the boat is the fisherman's means of earning a living he does not want his ship tied up for non-payment of debts.

When a fishing boat docks the owner will adjust his credit slips with the canneries, and pay his bills.

The fishing season ends in May, but the following month the pleasure season opens for the summer.

During the winter months Biloxi is a favorite play ground for mid-westerners, especially people from Chicago. Travelling usually is done on trains. In the summer months Biloxi is a resort for the nearby inland country, and this travel is largely by auto, or by yacht from other coast cities.

The yacht season begins in June and continues into September. Most yachts making port at Biloxi are from New Orleans and Mobile, Ala., but some pleasure craft arrives from Houston on the west over to Tampa on the east. Some yachts have been buying gasoline and oil from the Baltar company for the past 18 years.

The yacht business is more variable than that of the fishing industry. Sometimes yachts

A fishing boat at the wharf in Biloxi, Miss., with two 55-gallon drums of gasoline on deck

will make port for supplies and go on, while others will dock for a month at a time.

Gasoline is served to yachts through a pump on the dock. The average fill is about 150 gallons of gasoline, and five-gallons of motor oil.

While the fishing boats use a S. A. E. 50 motor oil the yachts take S. A. E. 30 and 40, and a few the 50. As with fishing boats, yachts take on oil in bulk.

So Biloxi may count tourists as its principal industry, but the fishing fleets and pleasure yachts are big consumers of our industry's products.

Distributor Trucks Motor Oil Over 175 Mile Territory

JACKSONVILLE, FLA.

THE Southeastern Oil Co. delivers motor oil with its own trucks to its retail dealers in a territory extending about 175 miles to the west and south of Jacksonville. The company is distributor for Quaker State oils.

By using its own trucks the company transacts all business with dealers at one call, covers the territory with only one warehouse stock, and eliminates haulage costs with private trucking companies or the railroads.

A salesman rides each truck which carries the stock of oil. At one call the oil is sold, and delivered.

All the cities and towns in the territory have been grouped into truck routes. The routes vary in length from one to four days, but the majority are covered in two or three days. The route is a loop, beginning and ending at the warehouse in Jacksonville.

The dealers are listed on cards, and the cards are filed by cities.

When a salesman prepares for a trip he has the truck loaded with oil drums. In the office he gets his routing from the file. The routes, by numbers, and the cities, are listed on the lid of the file.

After taking off the list of cities to be covered the salesman goes through the file taking out cards for all dealers in each town.

Each dealer has his own card. This lists what oil equipment he has, what brand of gasoline he sells, and his stock of oil—the inventory at the beginning of the previous call, amount delivered, and inventory when the salesman left.

These cards are carried by the salesman, and he brings the information on oil stocks up to date at each stop.

When the truck stops at a dealer's station or garage the salesman hops out, gauges the tanks, and makes the sale. Negroes drive the trucks and bucket the oil. Then the salesman notes the inventory after the oil fill, tends to any other business, and drives on to the next dealer's place.

Windmill to Lure Tourists

FORTY-EIGHT colored lights on the wings of this Dutch windmill gleam for long distances at night around Galesburg, Ill., where Peterson Bros. have patterned a service station after Holland's famous mills.

An observation tower will be fashioned from the space on the fourth floor of the station. This will be for the use of patrons and tourists. A tourist park, together with sandwich and refreshment stand, will be added in the spring, according to present plans.

The station is four stories high. The lower part of the station comprising the sales room is of stucco. The rest of the building is of green shingles, trimmed in white and red. The wheel is of wood, steel, copper and zinc painted white and gold. It turns 1½ revolutions per minute, with a half horsepower motor. The hub of the wheel is four feet and wing spread is 30 feet.

Rest rooms are on the second floor. They will be finished in two tone colors. The third floor room will be used for a living or sleeping room.

The station is three miles north of Galesburg on route 80, near Lincoln Park and Lake Story.

The Texas Co. products are handled.

This BUSINESS of DISPENSING PUMP METERS

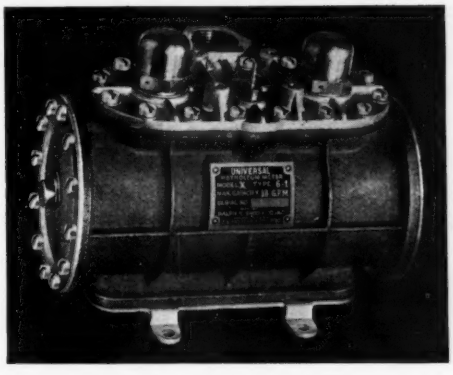
DEPENDABILITY

ECONOMY

THE PETROLEUM INDUSTRY has definitely turned to positive displacement meters for the solution of its measuring problems. This is evidenced by the continually-increasing number of positive displacement meters now in use throughout the world. Positive displacement meters are here to stay and have proved their true worth to the Industry.

As you consider the purchase of a positive displacement meter for your dispensing pumps, be sure to investigate these features...

ACCURACY



1 ACCURACY
2 SPEED.....
3 DEPENDABILITY
4 RUGGEDNESS
5 ECONOMY
6 SIMPLICITY

SIMPLICITY

The Universal Positive Displacement Meter for dispensing pumps meets all these demands and goes still further by offering Low Pressure Drop. This added advantage means less load on your motor and pump, less electrical energy consumed, less pressure on the hose, better nozzle control, and increased hose life.

Booklet sent on request.

MAKE GOOD PUMPS BETTER WITH..

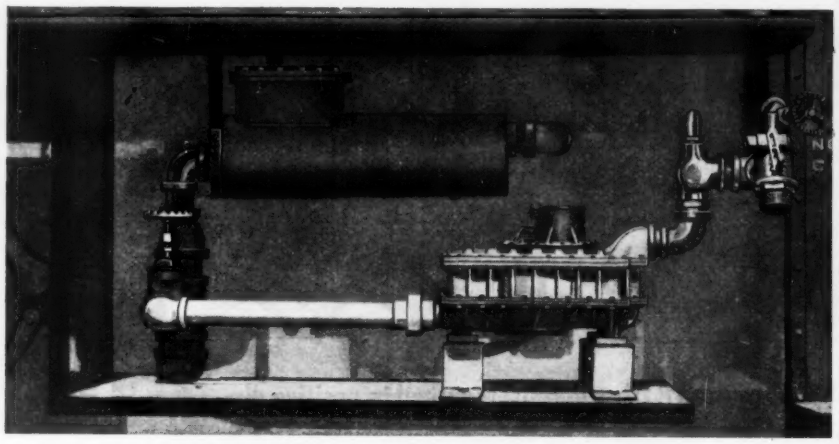
SPEED

RALPH N. BRODIE CO., Inc.
Exclusive Displacement Meter Manufacturers
950 SIXTY-FIRST STREET
OAKLAND, CALIF., U.S.A.

UNIVERSAL METERS

RUGGEDNESS

WE ALSO manufacture a complete line of Positive Displacement Meters for pipe-line, refinery, barge, bulk-storage and for tank-truck delivery. . . . . .



TYPE DS-1½" GRANBERG METER

on PUMPER TRUCK with GRANBERG Air Separator and Strainer. This is a photograph of a typical installation and is widely used for measuring pumped deliveries of furnace, fuel, diesel and other types of burner oils. The Air Separator prevents the discharge of air through meter when tank is pumped empty. Granberg Meter installations on pump equipped furnace oil trucks will permit accurate deliveries of any quantity of oil. Your customers will be better satisfied and your sales will be increased.

Literature mailed on request.

GRANBERG METER CORPORATION

79 New Montgomery St., San Francisco, Calif.

AQUA SYSTEMS, INC., Distributors—2 Lafayette St., New York City
OILMEN'S SERVICE AND SUPPLY CO., Distributors—142 Berkeley St., Boston, Mass.
NATIONAL PUMPS CORP., Dayton, Ohio, Manufacturers of
Granberg Meter Equipped Retail Pumps.

HALCO-BRAND

Be Assured-

of maximum quality, workmanship, fit and fair price, ask for Halco Brand Leather Leggings in your specifications for uniform equipment.

Halco Brand Leggings are made by one of the largest and oldest manufacturers in the country, from genuine solid leather to withstand rough wear of deliverymen and yet styled and finished to give the desired swanky appearance to station attendants.

Specify "Halco Brand"—it pays.

The Hagerstown
SHOE & LEGGING COMPANY
WELTS · STITCHDOWNS · MOCCASINS · LEGGINGS
Hagerstown, Md. U.S.A.

New Stations Building

Note: Material used in this column is taken principally from newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy. Headquarters of companies and addresses of individuals are given wherever possible.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Service Stations

Royalton, Minn.—Louis Litchy.

Minneapolis, Minn.—Elmer and Burt Grapes.

Carroll, Ia.—The Texas Co., Chrysler Bldg., New York, N. Y.

Davenport, Ia.—Continental Oil Co., Ponca City, Okla.

Carroll, Ia.—Frank Gray.

Morrison, Ia.—Members Mutual Co.

Ellsworth, Ia.—Clyde Dalbey.

Oelwein, Ia.—Standard Oil Co. of Indiana, 910 S. Michigan Ave., Chicago, Ill.

Indianola, Ia.—White Eagle Oil & Refining Co., 1400 Federal Reserve Bank Bldg., Kansas City, Mo.

Toledo, O.—Johnson Brothers, Jr.

Grafton, N. D.—Roy LaMarre.

Brainard, Minn.—A. A. Ludwig.

Orange City, Ia.—D. Milligan & Co., Jefferson, Ia.

Oskaloosa, Ia.—Makaska Farm Bureau Oil Co.

Manning, Ia.—C. E. Webb, Montour.

La Crosse, Wis.—Keizer Service Co., 935 West Ave., S.

La Crosse, Wis.—Wm. Rochelt, 214 North 29th St.

Minneapolis, Minn.—Hyman Adlin, 814 Pennsylvania Ave.

Minneapolis, Minn.—Rolit Johnson, 122-30 W. Lake St.

Waterloo, Ia. — Phillips Petroleum Co., Phillips Bldg., Bartlesville, Okla.

Clintonville, Wis.—Louis Thompson.

Dubuque, Ia.—Skelly Oil Co., Skelly Bldg., Tulsa, Okla.

Dubuque, Ia.—Rainbo Oil Co., 598 Central Ave.

Dubuque, Ia.—Louis A. Haag, E. Main St.

Des Moines, Ia.—Skelly Oil Co., Skelly Bldg., Tulsa, Okla.

Shenandoah, Ia.—Mid-Continent Petroleum Co., Cosden Bldg., Tulsa, Okla.

Lemmon, S. D.—Standard Oil Co., 910 S. Michigan Ave., Chicago, Ill.

Le Sueur, Minn.—White Eagle Oil & Refining Co., Kansas City, Mo.

Grinnell, Ia.—Continental Oil Co., Ponca City, Okla.

Sumner, Ia.—Louis A. Haag, E. Main St.

Independence, Ia. — Continental Oil Co., Ponca City, Okla.

Glencoe, Minn.—White Eagle Oil & Refining Co., Kansas City, Mo.

Henry S. D.—Gurney Oil Co.

Wagner, S. D.—Joe Burtan.

Alpena S. D.—Emanuel Lehr.

Detroit Lakes Minn.—Martin Davis, Summit Ave.

Detroit Lakes, Minn.—L. O. Fevig, Washington Ave. and Willow St.

Detroit Lakes, Minn.—H. B. Myhre.

Hudson, Ia.—Sophus Hermansen.

Sloan, Ia.—Glen Dubois.

Central City, Ia.—Earl Moore.

Ellsworth, Ia.—Clyde Dalbey, Main St.

Ellsworth, Ia. — Charley Reynolds, North, East, South and West Rds.

Carroll, Ia.—Continental Oil Co., Ponca City, Okla.

NEW Wilcox Motor Oil Is Refined to Meet Modern Demands

Using a selected, pure paraffin base crude and the latest and most scientific refining methods, WILCOX has created a line of motor oils that not only meets all demands of present day lubrication, but anticipates the demands of the future.

1.—A selected pure paraffin base crude gives WILCOX Motor Oil outstanding endurance—the ability to retain its body even under abnormally high engine temperatures.

2.—Refining by a straight overhead system removes all light ends and foreign material and makes this oil 100% lubricant, with low volatility and high flash, fire and viscosities.

3.—Thorough de-waxing secures an oil that flows at zero, forms no crankcase sludge and minimizes residue.

4.—Every shipment of New WILCOX Motor Oil is given our famous **double check** to insure accurate adherence to our perfected specifications.

Wire, phone or write for quotations on New WILCOX Motor Oils, WILCOX Greases, WILCOX Gasoline and WILCOX Ethyl Gasoline.

WILCOX OIL & GAS COMPANY

Producers — Refiners — Marketers

General Offices: Tulsa, Okla.

WILCOX MOTOR OIL

double Checked

Merchandising and Jobbing Ideas Marketers Are Practising

By E. L. Barringer
N. P. N. STAFF WRITER

THE precarious financial structure of a roadside hot dog gas station business is illustrated by a story told by an Alabama jobber.

This jobber was approached by the proprietor of a new roadside stand for an offer on gasoline and motor oil.

"I want to handle gas and oil, and I want to get the best proposition," confided the proprietor of the new stand, which was nearing completion.

"What I'd like to have would be an air compressor, some oil tanks and pumps, and some gasoline tanks and pumps. And I'd want the first load put in so I could pay as I sold the goods."

The oil jobber thought the new stand of doubtful value as a gasoline outlet, and that the proprietor's wants a little too much. So he turned the conversation aside by discussing the business venture along general lines. What stock the stand would carry seemed a little uncertain, at least the proprietor was holding off to see what "deals" could be made.

"Well when are you going to open up," the oil jobber inquired.

"As soon as I get electricity," replied the hot dog stand proprietor. "You see the power company wants a $15 deposit on its meter. I've got $12 in my pocket now and as soon as I get the other $3 I'll have the electricity turned on and open up."

* * *

Loading Line Meters Save Much Gasoline

Meters on the gasoline lines at the bulk plant truck loading racks have saved considerable motor fuel for E. H. Simpson, jobber at Jackson, Miss. After the installations were in he found that his measurements on the truck tanks were off an average of 1½ gallons for each compartment, and not in his favor. Now 1½ gallons is not much gasoline in itself, but for 15 compartments making several trips a day it soon represents a considerable loss.

* * *

Auto License Plates Expensive in South

Automotive equipment licences, as well as other taxes and fees, are high in the southeastern states. The following figures were supplied by a regional manager for a major oil company, and are from a representative city in each of the states. Annual license tags for a Ford coupe and a 2½ ton truck are:

	Ford coupe	2½ ton truck
Louisiana	$16.32	$69.04
Mississippi	12.09	57.25
Tennessee	15.52	71.75
Alabama	11.75	.....

* * *

Larger Kerosine Tanks Reduce Truck Cost

Large size tanks for kerosine storage in country grocery stores have been profitable for C. E. Suttles, operating the Perry County Oil Co., Marion, Ala. The use of larger tanks has reduced his trucking expense.

Kerosine has an extensive use in the rural communities for lamps, stoves, and for lighting fires. The country grocery stores retail the oil from 110-gallon tanks.

"The original investment in a 110-gallon kerosine storage tank is not much more than in a 60-gallon tank," said Mr. Suttles.

"With the larger tank a dump of 90 to 100 gallons can be made against a 40 to 50 gallon dump in the smaller size. Our trucks call on the grocery stores about every two weeks, against a weekly delivery. So it doesn't take long for the savings in delivery costs to cover that increased original investment of a few dollars for the larger tank."

* * *

Steam Cleaning Plant Adds to Station's Income

An income of about $260 is derived from an automobile steam chassis cleaning plant at the Barlow one-stop station in Jackson, Mich., above the regular business of the department.

When the station was opened several years ago the steam plant was installed in the car washing department for cleaning the motor and chassis. The business was presumed to be coming from regular car washing customers.

Then the auto paint companies in Jackson began using the steam plant. Autos would be sent over for cleaning the underparts prior to repainting. For this service the station charges $2.50 a car, and averages about two jobs a week from the paint companies, making the $260 a year.

* * *

Personal Inspection To "Sell" Customer

A personal inspection of all lubrication jobs is J. E. Bell's method of merchandising this service. Mr. Bell operates the Pearson avenue service station in Birmingham, one of the retail outlets of the Wofford Oil Co. of Alabama.

While the customers' car is on the lift Mr. Bell gets underneath and looks around. After looking at a number of fittings he will ask the grease man if he has gotten some specific point. All this is done in the presence of the customer.

"This inspection is no reflection on the grease man," said Mr. Bell, "but I do it to show the customer that I have a personal interest in his car."

Crude Production by Fields

By Telegraph—Daily average gross output, by fields in U. S., for week ending with dates below as compiled by A. P. I.

PRODUCTION SUMMARY

	April 11	April 4
Production east of Rockies	1,779,350	1,727,000
Increase		52,350
Total production in U. S.	2,308,250	2,252,100
Increase		56,150
Crude oil imports	101,715	174,855
Decrease		73,140
Total new crude supply	2,409,965	2,426,955
Decrease		16,990

OKLAHOMA

	April 11	April 4
Allen Dome	9,250	7,000
Asher	700	700
Asher, West	6,850	8,150
Blackwell	2,850	3,000
Bowlegs	7,950	18,800
Braman	1,900	1,950
Bristow-Slick	12,000	12,250
Burbank	12,700	12,700
Carr City	9,800	12,200
Cromwell	4,800	4,800
Cushing	12,700	12,700
Davenport	950	950
Duncan Dist.	6,700	6,700
Earlsboro	13,100	11,250
Earlsboro, East	14,000	21,600
Earlsboro, So.	8,400	5,850
Fox Graham	4,050	4,050
Garber	4,000	3,950
Healdton	10,600	10,600
Hewitt	6,100	6,100
Hubbard	950	900
Konawa	12,400	13,250
Little River	15,100	35,800
Little River, E.	7,900	9,150
Logan Co.	3,900	3,950
Maud	1,850	1,300
Mission	3,900	8,750
Oklahoma City	163,700	127,450
Okmulgee, No.	9,200	9,200
Okmulgee, So.	5,000	5,000
Osage (Outside Burbank)	22,300	22,400
Papoose	2,000	2,000
Pearson	550	550
Sasakwa	2,400	3,350
St. Louis	17,450	13,800
Scholem-Alechem	12,850	12,750
Searight	2,750	3,200
Seminole	9,000	5,050
Seminole, East	1,750	1,200
Thomas	600	550
Tonkawa	6,150	5,200
Weworka	8,500	8,650
Yale-Jennings	5,800	5,500
Others	48,300	47,300
Total, Okla.	513,700	511,550
Increase		2,150

KANSAS

Augusta - Fox Bush	2,850	2,850
Churchill	3,150	3,150
El Dorado Towanda	12,150	12,150
Florence-Covert	700	700
Greenwood Co.	16,250	16,250
Oxford	2,200	2,200
Peabody-Elbing	1,500	1,550
Rainbow Bend	1,400	1,400
Russell	3,000	3,000
Sedgwick Co.	17,450	17,800
Voshell	17,850	17,900
Others	31,000	30,000
Total, Kans.	109,500	108,950
Increase		550

NORTH LOUISIANA

Caddo, light	7,550	7,550
Caddo, heavy	2,700	2,750
Cotton Valley	1,750	1,800
De Soto and Red River	2,650	2,700
Haynesville	5,850	5,650
Holly	550	550
Homer	3,300	3,350
Sarepta		
Carterville	1,250	1,400
Urania	4,550	4,550
Zwolle	7,050	7,500
Others	1,550	1,450
Total, N. La.	38,750	39,250
Decrease		500

ARKANSAS

Champagnolle	3,000	3,100
El Dorado	3,600	3,750
Lisbon	750	800
Nevada	1,000	950
Smackover, light	4,200	4,300
Smackover, heavy	32,200	32,300
Stephens	850	850
Others	1,550	1,150
Total, Ark.	47,150	47,200
Decrease		50

ROCKY MOUNTAIN

Wyoming

Big Muddy	2,200	2,200
Elk Basin	650	700
Grass Creek	2,050	2,000
Labarge	1,400	2,000
Lance Creek	200	250
Lost Soldier	2,750	2,750
Oregon Basin	1,300	1,300
Rock River	2,000	2,000
Salt Creek	26,050	25,750
Others	3,700	3,700
Total, Wyo.	42,300	42,650
Decrease		350

Montana

Cat Creek	1,050	1,050
Pondera	1,700	1,550
Sunburst	4,450	4,450
Others	1,600	1,650
Total, Mont.	8,800	8,700
Increase		100

Colorado

Florence	500	400
Fort Collins	1,000	950
Moffat (Craig)	900	950
Others	1,850	1,850
Total, Colo.	4,250	4,150
Increase		100

New Mexico

Artesia	550	550
Bal. Eddy Co.	150	200
Hobbs High	31,550	33,250
Bal. Lea Co.	4,800	6,200
Hogback	450	450
Rattlesnake	800	1,100
Table Mesa	50	50
Total, N. M.	38,350	41,800
Decrease		3,450
Total, Rocky Mountain	93,700	97,300
Decrease		3,600

TEXAS (OUTSIDE GULF COAST)

Panhandle District

Carson County	3,700	3,400
Gray County	38,700	39,750
Hutchinson Co.	7,700	7,600
Wheeler Co.	300	350
Others	250	300
Total Pandle Tex.	50,650	51,400
Decrease		750

NORTH TEXAS

Archer Co.	11,550	11,800
Burkburnett	7,000	7,200
Electra	8,500	8,850
Iowa Park and K. M. A.	3,600	3,700
Montague-Cooke	5,400	5,300
Wilbarger	10,000	10,400
Young Co., No.	9,900	9,100
Others	1,200	1,300
Total, N. Tex	57,150	57,650
Decrease		500

West Central Texas

Brown Co.	3,700	4,100
Callahan Co.	1,500	2,000
Coleman Co.	1,700	1,100
Eastland-Desdemona	3,800	4,000
Jack Co.	1,100	950
Palo Pinto Co.	300	400
Shackleford Co.	3,600	4,000
Stephens Co.	4,600	4,600
Throckmorton County	400	400
Young Co., So.	3,300	2,600
Others	1,050	1,200
Total, West Cen. Tex.	25,050	25,350
Increase		300

West Texas

Crane and Upton Cos.	24,000	23,800
Crockett Co.	1,800	1,800
Ector Co.	6,450	5,800
Howard Co.	29,400	27,000
Jones Co.	1,200	1,200
Mitchell and Scurry Cos.	2,050	1,900
Reagan Co.	35,000	33,250
Winkler Co.	45,900	46,600
Yates	83,200	92,500
Bal. Pecos Co.	6,000	4,200
Others	6,950	7,000
Total, W. Tex.	241,950	245,050
Decrease		3,100

East Central Texas

Boggy Creek	2,150	2,200
Corsicana-Powell	4,800	4,800
Currie	250	300
Mexia	3,600	3,600
Nigger Creek	150	150
Richland	100	100
Rusk County:		
Joiner field	59,700	51,500
Kilgore	104,550	68,200
Gregg County:		
Longview	30,750	25,000
Van Zandt	40,100	35,800
Wortham	500	500
Others	50	50
Total, E. Cen. Tex.	246,700	192,200
Increase		54,500

Southwest Texas

Chapman		
Abbot	4,200	4,600
Dale	300	250
Darst Creek	20,050	17,000
Laredo Dist.	13,850	14,500
Luling	9,050	9,450
Lytton Spgs.	700	750
Salt Flat	12,300	12,800
Somerset	1,300	1,300
Others	500	500
Total, S. W. Texas	62,250	61,150
Increase		1,100
Total, Texas (Outside Gulf Coast)	683,750	632,800
Increase		50,950

GULF COAST

Coastal Texas

Barbers Hill	23,000	22,500
Batson	1,000	1,000
Big Creek	3,250	3,300
Blue Ridge	1,100	1,150
Boling	700	750
Damon Mound	550	650
Esperson	2,300	2,400
Fannett	400	400
Goose Creek	4,400	4,500
Hankamar	2,900	2,700
Hull	6,300	5,850
Humble	10,500	10,800
Moss Bluff	600	800
No. Dayton	700	600
Orange Co.	1,950	2,000
Orchard	1,900	1,950
Pettus	7,300	7,150
Pierce Junct.	8,050	8,900
Port Neches	1,450	1,400
Raccoon Bend	8,900	9,000
Refugio Co.	31,350	30,150
Saratoga	1,050	900
Somerville	2,300	2,400
Sour Lake	2,000	2,050
So. Liberty	2,300	2,200
Spindletop	10,000	10,250
Sugarland	11,750	11,750
West Columbia	4,200	4,300
Others	2,100	2,000
Total, Coastal Tex.	154,300	153,800
Increase		500

Coastal Louisiana

Edgerly	400	500
Evangeline	800	750
Hackberry, E.	1,800	2,000
Hackberry, Old	800	800
Lake Barre	2,400	2,850
Lockport	6,150	6,050
Port Barre	1,700	1,800
Sulphur Dome	1,800	1,700
Vinton	6,500	6,250
White Castle	1,000	1,000
Others	3,650	2,950
Total Coastal La.	27,000	26,650
Increase		350
Total, Gulf Coast	181,300	180,450
Increase		850

CALIFORNIA

Dominguez	12,000	12,000
Elwood-Goleta	34,800	34,400
Huntington Beach	22,000	20,800
Inglewood	15,000	15,000
Kettleman Hills	26,600	26,000
Long Beach	89,400	90,000
Midway-Sunset	54,900	54,000
Playa del Rey	28,500	30,200
Santa Fe Spgs.	70,800	71,200
Seal Beach	15,600	15,500
Ventura Ave.	43,200	44,500
Others	116,100	111,500
Total, Calif.	528,900	525,100
Increase		3,800

EASTERN

(Not including Mich.)	103,100	101,050
Increase		2,050

MICHIGAN

Mt. Pleasant	6,500	6,550
Muskegon	1,750	1,750
Saginaw	150	150
Total, Mich.	8,400	8,450
Decrease		50

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations, Week Ended April 10 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended April 10
Plants Reporting	10	23	23	10	10	76
Da. Av. Cap. (Bbls.)	94,000	162,500	107,400	71,500	60,700	496,100
Da. Cracking Capacity	53,200	64,600	23,100	26,250	31,700	193,850
Da. Av. Crude Runs	62,673 + 25.4	95,799 + 11.3	56,821 + 7.1	35,934 + 21.9	47,563 + 20.2	299,790 + 15.7
Da. Av. Other Oil	6,817 — 26.1	2,833 — 32.7	3,965 +203.8	.....	17,410 + 18.0	31,025 + 1.7
GASOLINE—Gallons						
Stocks, April 3	30,319,000	46,840,000	35,555,000	10,773,000	4,964,000	128,451,000
Prod. 4-3 to 4-10	11,354,000 + 6.8	13,819,000 + 1.8	9,412,000 + 20.7	3,633,000 + 24.2	7,039,000 + 23.7	45,257,000 +11.4
Ship. 4-3 to 4-10	10,843,000 + 7.9	16,024,000 + 1.5	8,922,000 + 59.5	2,851,000 — 1.1	7,339,000 + 7.6	45,979,000 +11.8
Stocks, April 10	30,830,000 + 1.7	44,635,000 — 4.7	36,045,000 + 1.4	11,555,000 + 7.3	4,664,000 — 6.0	127,729,000 — 0.6
Ratio Sales to Prod.	95.5%	116.0%	94.8%	78.5%	104.3%	101.6%
KEROSINE—Gallons						
Stocks, April 3	8,040,000	15,383,000	2,166,000	36,000	296,000	25,921,000
Prod. 4-3 to 4-10	2,212,000 + 8.2	1,985,000 + 23.2	1,081,000 + 5.2	....	284,000 — 13.7	5,562,000 + 11.0
Ship. 4-3 to 4-10	2,224,000 — 2.8	2,331,000 + 0.8	1,180,000 — 1.2	29,000 +163.6	422,000 + 88.4	6,186,000 + 2.6
Stocks, April 10	8,028,000 — 0.1	15,037,000 — 2.2	2,064,000 — 4.6	7,000 — 80.6	158,000 — 46.4	25,294,000 — 2.4
Ratio Sales to Prod.	100.5%	117.4%	109.2%	.....	148.6%	111.2%
STOVE DISTILLATE—Gallons						
Stocks, April 3	3,009,000	4,834,000	545,000	76,000	24,000	8,578,000
Prod. 4-3 to 4-10	453,000 — 23.2	756,000 — 0.4	291,000 — 5.8	33,000 + 94.1	45,000 + 18.4	1,578,000 — 7.9
Ship. 4-3 to 4-10	571,000 — 19.5	993,000 + 71.5	356,000 — 5.3	12,000 — 61.3	30,000 — 16.7	1,962,000 + 13.3
Stocks, April 10	2,981,000 — 3.8	4,597,000 — 4.9	480,000 — 11.9	97,000 + 27.6	39,000 + 62.5	8,194,000 — 4.5
Ratio Sales to Prod.	126.0%	131.3%	122.3%	63.6%	66.7%	124.3%
GAS OIL—Gallons						
Stocks, April 3	3,343,000	28,811,000	2,851,000	3,564,000	5,660,000	44,229,000
Prod. 4-3 to 4-10	807,000 — 14.1	1,353,000 — 60.0	941,000 + 1.4	1,289,000 +204.7	2,554,000 + 17.9	6,944,000 — 11.4
Ship. 4-3 to 4-10	662,000 — 27.5	1,851,000 — 12.8	900,000 — 19.0	546,000 — 51.7	2,291,000 + 9.5	6,250,000 — 15.2
Stocks, April 10	3,488,000 + 4.3	28,313,000 — 1.7	2,892,000 + 1.4	4,307,000 + 20.8	5,923,000 + 4.6	44,923,000 + 1.6
Ratio Sales to Prod.	82.0%	136.8%	95.6%	42.4%	89.7%	90.0%
FUEL OIL—Gallons						
Stocks, April 3	9,937,000	49,342,000	60,811,000	13,073,000	21,986,000	155,149,000
Prod. 4-3 to 4-10	5,974,000 + 36.1	3,923,000 — 13.0	5,277,000 — 0.6	5,068,000 + 23.1	5,429,000 + 25.1	25,671,000 +13.3
Ship. 4-3 to 4-10	4,829,000 + 7.6	3,791,000 — 28.5	5,805,000 + 2.8	3,958,000 — 0.3	5,504,000 + 14.5	23,887,000 — 1.3
Stocks, April 10	11,082,000 + 11.5	49,474,000 + 0.3	60,283,000 — 0.9	14,183,000 + 8.5	21,911,000 — 0.3	156,933,000 + 1.1
Ratio Sales to Prod.	80.8%	96.6%	110.0%	78.1%	101.4%	93.1%

Gasoline Produced by Various Methods, Week Ended April 10

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,091,000	53.6	9,518,000	68.9	5,767,000	61.3	3,510,000	96.6	2,884,000	41.0	27,770,000	61.4
Cracked	4,600,000	40.5	3,371,000	24.4	2,249,000	23.9	.....	....	3,235,000	46.0	13,455,000	29.7
Natural	663,000	5.9	930,000	6.7	1,396,000	14.8	123,000	3.4	920,000	13.0	4,032,000	8.9
Total	11,354,000		13,819,000		9,412,000		3,633,000		7,039,000		45,257,000	

\+ or — columns are % change over previous week.

Gasoline Stocks Fall in Spite of Larger Output

Staff Special—By Telegraph

TULSA, April 14

CRUDE oil runs to stills at Mid-Continent refineries that report their operating statistics to NATIONAL PETROLEUM NEWS, were increased 40,700 barrels daily average in the week ended April 10 over runs the next preceding week. Runs increased from 7 per cent in North Texas to 25 per cent in Kansas.

Gasoline output was increased 4,600,000 gallons. All districts shared in the increase. Gasoline shipments increased 4,800,000 gallons, totaling 45,979,000 gallons for the week. This was the largest volume of shipments from these plants since the week ended Nov. 14, last. All districts but West Texas increased shipments. Shipments fell 32,000 gallons in West Texas.

Gasoline stocks were reduced 700,000 gallons in the entire region. Oklahoma refiners lowered stocks 2,200,000 gallons and Louisiana-Arkansas refiners 300,000 gallons. Stocks rose in other districts.

Kerosine stocks were reduced 600,000

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended April 10. Change in stocks figures from March 13.

GASOLINE

	Gallons
Production	179,367,000
Shipments	183,711,000
Net change in stocks	—4,344,000
Ratio sales to production	102.4%

KEROSINE

	Gallons
Production	22,212,000
Shipments	24,626,000
Net change in stocks	—2,414,000
Ratio sales to production	110.9%

STOVE DISTILLATE

	Gallons
Production	6,527,000
Shipments	7,324,000
Net change in stocks	—797,000
Ratio sales to production	112.2%

GAS OIL

	Gallons
Production	25,009,000
Shipments	23,503,000
Net change in stocks	+1,506,000
Ratio sales to production	94.0%

FUEL OIL

	Gallons
Production	100,211,000
Shipments	97,507,000
Net change in stocks	+2,704,000
Ratio sales to production	97.3%

gallons, although output increased. Distillate stocks were lowered 380,000 gallons. Gas oil stocks rose 700,000 gallons, and fuel oil stocks 1,700,000 gallons.

Tells What Ethyl Gasoline Is and Does

NEW YORK, April 11.—A peep through pictures and the printed word into the cylinders of your automobile to see what goes on there when ordinary gasoline is used and when Ethyl gasoline is used, is furnished in "The Inside Story of Ethyl Gasoline," a booklet recently published by the Ethyl Gasoline Corp. under the supervision of L. P. Locke, advertising manager.

It tells why Ethyl fluid was developed, what its effect has been on motor car design, what it will do in the engine of your car and gives general information in the form of questions and answers on this fluid. Such questions as to what this fluid is, why combustion control is needed in the modern automobile, what the effects of uncontrolled combustion are, and other pertinent information of interest to motorists, are answered.

Esso Now Marketed in New England

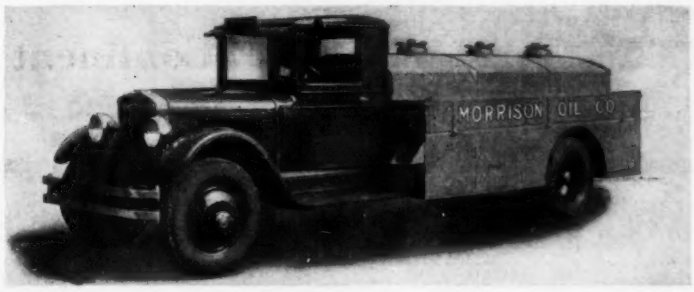
NEW YORK, April 11.—Standard Oil Co. of New Jersey has extended the sale of its Esso premium motor fuel into New York and the New England states through its subsidiary, Colonial Beacon Oil Co. Before April 2 Colonial Beacon's premium fuel was marketed as Colonial Ethyl Esso is an Ethylized fuel.

In announcing the extension of the Esso into New York and New England and Standard of New Jersey also said it was on sale in 20 foreign countries and in the United States from Maine to Louisiana.

Alcohol from Gas in Canada

TORONTO—The Federal Research Council of Canada has developed a process for production of alcohol from natural gas, which may solve the problem of the big waste of gas in the Alberta fields. Application of this process to the stabilizer gases collected at the well heads would it is estimated, produce 10,000,000 gallons of alcohol yearly, and if applied to the total waste of gases of the field, 140,000,000 gallons. Canada uses in excess of $2,000,000 of industrial alcohol annually.

Of the 15,900 pounds of petrolatum imported by Bulgaria during the first half of 1930, not one pound was shipped from the United States. Germany shipped 8000 pounds, the United Kingdom 5500 pounds and Italy 1760 pounds.



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as well as sturdy construction

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UNION METAL
OIL MARKETING EQUIPMENT

Refinery - Tank Wagon Markets

General Price Trend Continues Downward; Buyers Inactive in Most Areas

CLEVELAND, April 13

THE general trend of prices continued downward in virtually all refining districts in the United States last week. Jobbing demand for light oils was strictly on a hand-to-mouth basis. Unusually favorable weather conditions over most of the country apparently did not tend to increase buying. Industrial demand for heavy oils was slack.

Middle western markets were thrown into more or less of an unsettled state late in the week when the Standard Oil Co. of Indiana announced a 1-cent reduction in service station prices for Red Crown and Ethyl gasolines and told of its plan to offer a cheaper third grade of gasoline to "price buyers." The company's plans are discussed in detail elsewhere in this issue.

Gasoline prices receded approximately 0.125 cent in all Mid-Continent refining districts and also in the Chicago tank car market. There were conflicting reports concerning the status of gasoline markets in these areas. Some refiners indicated they had made substantial drafts on their gasoline stocks and were contemplating advancing prices. Others reported they had not experienced any improvement in demand and they made slight reductions in their quotations.

Gasoline prices were 0.25 cent lower in the three most important eastern seaboard markets—New York, Baltimore and Philadelphia. Pennsylvania gasoline prices lost 0.125 to 0.5 cent a gallon, the higher gravity grades receding the most. The price range for U. S. Motor on the west coast narrowed from the top side, the minimum quotation remaining at 3.25 cents for both in-and out-of-state shipment.

Tank car prices for the lighter burning oils were an 0.125 to 0.25 cent lower in most markets with heavy fuels receding 2.5 to 5 cents a barrel.

Export buying at the Gulf and on the west coast remained at a standstill. Inter-coastal trading was a shade more active. All grades of gasoline and kerosine were quoted 0.25 to 0.5 cent lower in both markets.

S. O. Ind. Announcement Upsets Chicago Market

Staff Special

CHICAGO, April 11

THE announcement by the Standard Oil Co. of Indiana April 9 of radical changes in its marketing policy caused considerable excitement in what had been a very quiet market in Chicago prior to that time. Tank car gasoline buying had been steady at unchanged price levels but the announcement of a 1-cent reduction in service station gasoline prices and the introduction of a new grade of gasoline to sell at 2 cents a gallon under the regular Red Crown price, upset the market.

Most marketing companies with offices in Chicago declared that they were undecided as to what policy to pursue in meeting this new competitive gasoline and in addition were uncertain regarding the spot tank car gasoline market. They said it would take several days for the market to adjust itself to the new conditions.

Other companies offered gasoline at the same prices as before the retail change, or at 0.125 cent less. They were of the opinion that further changes in the retail structure were probable and that there might be a reduction in crude oil prices.

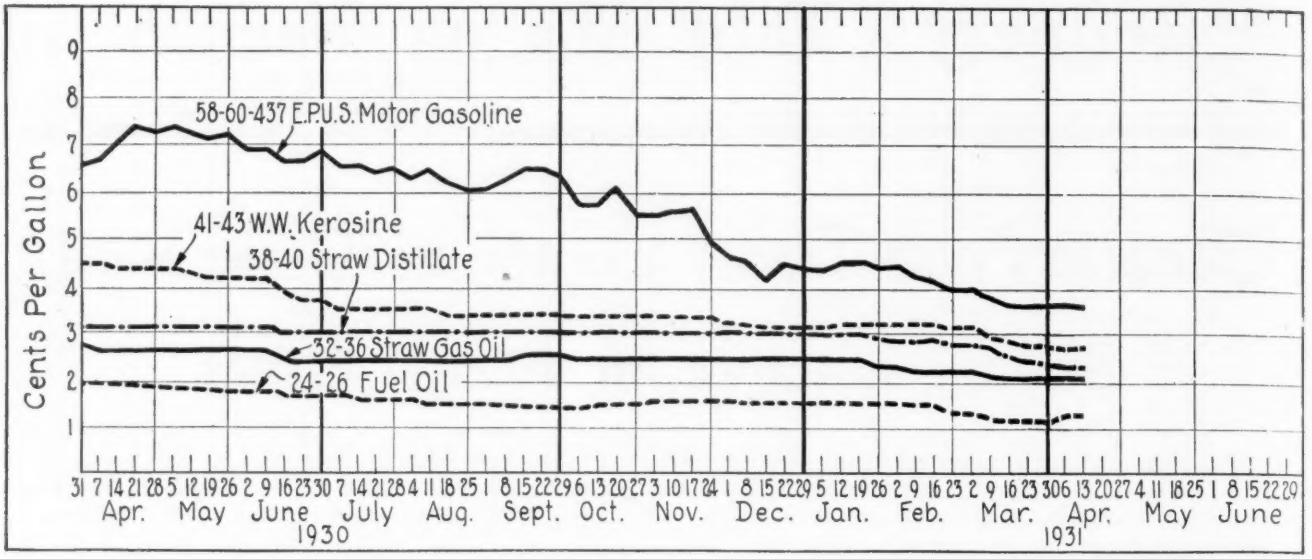
A few carlot marketers reported making some "short" sales, but most of them were unwilling to take a chance at present. They pointed out that the situation regarding crude and gasoline stocks in both the Mid-Continent and Central States refining district was practically unchanged and they could see no reason for much of a drop in tank car prices. In fact, reports from Oklahoma and Texas Saturday were to the effect that a number of refiners were contemplating advancing their prices.

Gasoline buying was at a minimum Friday and Saturday. Jobbers were in the market only for gasoline they had to have and were waiting for further developments before doing much buying. Most of them were faced with the necessity of meeting competition from the Standard's new low-priced gasoline and will lose much of their present margin unless they are able to buy at lower prices.

Tank car gasoline prices the first half of the week were steady and unchanged over the previous week. Sales of U. S. Motor had been generally at 3.375 to 3.75 cents, with some moved at 3.25 cents. More Motor made its appearance at 3.25 cents Friday and Saturday. It was being offered mostly by carlot marketers who reported they could buy in North and West Texas at 3.125 cents. A little material also was available in Oklahoma at this figure for resale. It was reported that some East Texas U. S. Motor was being offered at 3.25 cents, f.o.b. Group 3, but little definite information was available regarding gasoline from this field.

Kerosine was reported quiet by most sellers, although several said they had had a fair demand during the week. Sales of 41-43 w.w. were mostly at 2.625 to 3 cents, with the 42-44 grade 0.125 cent higher. Several traders said they believed the new low-priced retail gasoline would have a detrimental effect on kerosine buying. At present, tank wagon prices of kero-

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P.U.S. Motor Gasoline
41-43 W.W. Kerosine
38-40 Straw Distillate
32-36 Straw Gas Oil
24-26 Fuel Oil
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1930
1931

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

sine are close to 9 cents a gallon in most sections of the middle west. As the price for the new gasoline also will be close to this figure it will probably cause many kerosine users to switch to gasoline.

Domestic and industrial burning oils were quiet all week. Prices for most gas and fuel oils were lower.

Indiana To Form Oil Clubs

INDIANAPOLIS, Ind.—The spring convention of the Indiana Petroleum Association will be held at the Severn Hotel here, May 6 and 7. One of the objects will be to organize state petroleum clubs in the congressional districts of the state, according to Max L. Wickersham, executive secretary. The program is now being prepared.

Makes New Safety Record

PONCA CITY, Okla., April 10.—For the first time in the history of Continental Oil Co., all units in the manufacturing department have operated for one entire month without a single lost-time accident, according to Joe Boylan, supervisor of safety and sanitation. The men who established this record work in 11 refineries, one water terminal, one fuller's earth plant, and include also the personnel of the engineering and laboratory divisions.

This record represents a total of 207,665 working hours for 1122 men.

Of the 13 units, only three have sustained lost-time accidents since Jan. 1, 1931, with the Ponca City refinery accounting for three; Baltimore refinery, one, and Texas City, Texas, water terminal, one.

All of the other units have maintained a perfect record, and as a result the frequency rate for the manufacturing department for the past three months has been held to 9.4, with a severity rate of .08.

France received 776,500 barrels of crude oil from Persia during the first half of 1930, 127,000 barrels from Colombia, and none from the United States.

Shipments From Southern California

LOS ANGELES, April 7.—Shipments of bulk petroleum from southern California ports to Foreign and Atlantic Seaboard ports totaled 1,340,596 barrels for week ended April 4 as compared with a total of 1,164,561 barrels a week ago. Destination and quantity of shipments were as follows:

Destination	Crude	Gasoline	Diesel	Kerosine	Fuel	Total
Pacific For.	73,831	152,933	33,261	12,056	312,272	574,353
Atlantic Dom.	.....	425,215	119,704	Kero.-Dist. 91,240	.....	636,827
Atlantic For.	.....	158,176	.....	Kerosine 71,240	.....	229,416

Shipments from the same ports during the month of March totaled 8,162,874, an increase of 70,227 over the February total. These figures include shipments to Pacific Domestic ports as follows:

Destination	Crude	Gasoline	Diesel	Kerosine	Distillate	Fuel	Total
Pacific Dom.	1,673,022	1,351,546	112,475	21,109	17,491	872,435	4,048,078
Pacific For.	258,509	340,063	273,575	150,915	.....	955,593	1,978,655
Atlantic For.	.....	242,101	.....	139,451	.....	.....	381,552
Atlantic Dom.	.....	1,521,110	192,479	41,000	.....	.....	1,754,589

Prices 10 Years Ago
April 11, 1921

	Oklahoma	Penna.
58-60 U. S. Motor.....	16.50-17.00	20.00-20.50
80-84 Natural	11.00-12.25	.....
Kerosine (42-43 Okla.; 47 w. w. Pa.).....	4.25-4.75	8.50-8.75c
Fuel Oil (24-26 Okla.; 36-40 Pa.)	$0.70-$0.80	4.75-5.00
Crude (Okla. 35-35.9)..	$1.75	$3.00
Chicago tank wagon (no state tax)		23.00c

Prices A Year Ago
April 14, 1930

	Oklahoma	Penna.
58-60 U. S. Motor.....	7.0714	7.50-8.25c
Grade A Natural	6.50	.....
Kerosine (Okla. 41-43; Pa. 47 w. w.)	4.25-4.50c	6.25-6.50c
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.80-$0.85	4.00-4.50c
Crude (Okla. 35-35.9)..	$1.255	$3.00
Chicago tank wagon (including 3c tax)		18.00c

Mid-Continent Refinery Markets

Markets Agitated by Standard Announcement

Staff Special
TULSA, April 11

THE Mid-Continent refinery markets were agitated late in the week of April 6 to 11 by the announcement of the Standard Oil Co. of Indiana that a "competitive grade" of gasoline was to be introduced, and the reduction of 1 cent in service station price, with no change in tank wagon prices.

The announcement came too late in the week for refiners to determine just what the final effect would be on the tank car prices. And the jobbers, as usual, when there is something amiss, dropped out of the spot market as much as possible to await further developments.

The market accordingly experienced a rather dilatory week with the exception of the last two days. Earlier in the week demand was reported to have increased somewhat in volume although Oklahoma and Kansas refiners encountered some competition from other districts. The demand had increased sufficiently, a few refiners said, to cause substantial reductions in their stocks, and they accordingly contemplated slight advances in quotations. Other refiners said their business had not been sufficiently large to warrant any price advance, and in a few instances slightly lower quotations were posted.

Marketers reported their buying prices were lowered to 3.125 cents, Group 3, for 58-60 U. S. Motor in a few quarters, but the prevailing prices to jobbers ranged from 3.375 to 3.875 cents April 11.

Some of this gasoline in the hands of marketers originated in north, west and east Texas. Refiners in those districts have very few jobber outlets, and many of them depend almost entirely on marketers to move their production. The refiners who do have jobber outlets continued to obtain from 3.375 cents up for their U. S. Motor.

Reports from Texas late in the week indicated east Texas proration appeared more of a possibility than it had earlier in the week and more optimism was shown among refiners. Several of them said they expected an advance of at least 0.125 cent a gallon within the next few days.

The Standard's announcement of the new grade of gasoline resulted in numerous inquiries late in the week for naphthas. While prices for this grade of oil, as well as for some of the other grades, lost some ground, demand gave promise of a sizable increase. Refiners took this situation as indicative of a plan on the part of many jobbers in the Standard of Indiana territory to offer a blended gasoline, using a low gravity refined product and natural gasoline.

Natural gasolines showed no indication of rallying from the sluggish situation which they have experienced the past few weeks. Demand was only fair, most manufacturers reported. No large buying was indicated either by direct inquiries or by reports. Many refiners were said to have reduced their use of naturals considerably with the advent of milder weather.

While the demand has been exceedingly light, there normally would have been little if any distress gasoline. It so happened that this time two large companies which normally use their own production and also buy from other manufacturers, have been offering their gasoline in the open market for two months or more.

Had these companies used their natural gasoline it is doubtful if there would have been any surplus material at any time, especially in view of the fact that production has been at the lowest point in three years.

Kerosine demand was fair in most districts with no changes in prices. Distillates were rapidly fading from the picture except as a tractor fuel. Gas oils were in light demand and prices for several grades lost some ground.

Fuel oils were sluggish, most refiners said. This was especially true of the higher gravities, and prices declined from 2.5 to 5 cents a barrel in Oklahoma.

Bright stock prices declined from 0.50 to 2 cents a gallon in the Mid-Continent. The low cold test oils experienced the largest reduction. Reports from refiners indicated considerable competition had developed from at least one Gulf coast refiner who operates to some extent on Mid-Continent crude.

Refiners making the higher cold test bright stock quoted 14 cents and up for their material. In a few instances refiners who make a lower cold test oil met this quotation rather than lose an account. These 14-cent quotations for 0 to 10 cold test grades were isolated, however, and were not considered representative of the going market.

Neutral oil prices were unchanged from the previous week, with demand reported fair. The largest demand for neutrals at present, one refiner said, was in the form of finished tractor oil.

Ethyl Gasoline Sales Gain 50% After $12,000,000 Campaign

NEW YORK, April 11

MORE money was spent in advertising Ethyl gasoline in 1930 than any other single product in the world.

Sales gained 48 per cent over 1929.

Refiners spent some $10,200,000 in advertising it and the Ethyl Gasoline Corp. spent $2,000,000.

Half of the refiner advertising went to newspapers. One-third went into billboards.

Ethyl gasoline sales constituted about 20 per cent of total gasoline sales.

Total average expenditure in advertising by refiners was slightly more than one-half cent per gallon.

These facts were established in a survey made recently by the Ethyl Gasoline Corp. under the direction of Lucien P. Locke, advertising manager, to determine the amount of money spent annually in advertising by refiner licensees and to discover to what extent various media were used.

Forty-seven refiner licensees representing over 70 per cent of all Ethyl gasoline sales, reported their advertising expenditures to this survey. These refiners constitute about half of the total refiner licensees.

Nine refiners selling over 25,000,000 gallons of Ethyl gasoline annually, spent one-half cent per gallon in advertising this gasoline. The relation of their sales of Ethyl to their total gasoline sales was 22 per cent.

Thirteen refiners selling from 10,000,000 to 25,000,000 gallons of Ethyl annually, spent a little more than half a cent in advertising this product. The relation of their sales of Ethyl to total gasoline sales was 21 per cent.

Twenty-three refiners selling less than 10,000,000 gallons of Ethyl annually, spent a little more than 1 cent per gallon in advertising. The relation of sales of Ethyl to total gasoline sales was 18 per cent.

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect April 13

	Price F.O.B. Group 3	*Price F.O.B. Point of Origin*	*If for Particular Destination*
Oklahoma	3 375–3.875	3.375–3.875	
Kansas	3.50 –3.75		S. O. Neb. & Indiana Territories, etc.
Kansas		4.00 –4.25	Kansas only.
North Texas	3.375–3.625	3.375–3.625	
West Texas	3.375–3.625	3.375–3.625	
Louisiana-Arkansas	3.625–3.75		Michigan, Ohio and Indiana.
Louisiana-Arkansas		4.00	State or differential haul.
Indiana-Illinois	3.375–3.75	*	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from Indiana and Illinois refineries, according to conditions and freight rates; no prices F. O. B. point of origin can be given.

Chicago Tank Car Market

CHICAGO, April 11

THE Chicago market was unsettled following the Standard of Indiana's announcement of a service station price reduction and the introduction of a new low-priced gasoline. Most traders were undecided as to future policies and quotations. Spot buyers were inactive, awaiting further developments. Most sales of U. S. Motor reported March 11 were at 3.25 to 3.75 cents. Carlot marketers reported they could buy Motor at 3.125 cents, mostly in North and West Texas. Kerosines were quiet. Distillates, gas and fuel oils were inactive.

Following prices represent majority of sales made on Group 3 freight basis, although shipments may originate in other refining districts, such as North and West Texas, Louisiana, Arkansas, Indiana, Illinois, Kentucky, etc.

	Prices April 13	Prices April 6	Prices March 30
58-60 U. S. Motor, 437 e.p.	3.25 – 3.75	3.375– 3.75	3.50 – 3.875
†56-62 400-437 e.p. anti-knock gasoline	3.75 – 4.875	3.75 – 4.875	3.875– 4.875
60-62 437 e.p. gasoline	3.375– 3.75	3.50 – 3.875	3.50 – 3.875
60-62 400 e.p. gasoline	3.50 – 3.875	3.625– 4.00	3.625– 4.00
64-66 375 e.p. gasoline	4.00 – 4.375	4.125– 4.375	4.125– 4.50
68-70 350-360 e.p. gasoline	4.375– 4.875	4.375– 4.875	4.375– 4.875
*Domestic Aviation Gasoline	5.75 – 6.125	5.75 – 6.125	6.00 – 6.25
41-43 w.w. kerosine	2.625– 3.00	2.625– 3.00	2.625– 3.00
42-44 w.w. kerosine	2.75 – 3.00	2.875– 3.125	2.875– 3.125
38-40 p. w. distillate	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
38-40 straw distillate	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
32-36 ordinary dark gas oil	1.375– 1.50	1.375– 1.50	1.375– 1.625
32-36 dark zero gas oil	1.875– 2.125	2.00 – 2.125	2.00 – 2.25
32-36 straw zero gas oil	2.00 – 2.25	2.125– 2.25	2.125– 2.375
28-30 zero fuel oil (per bbl.)	$0.75 –$0.775	$0.75 –$0.775	$0.75 –$0.80
28-30 fuel oil (per bbl.)	$0.725–$0.775	$0.75 –$0.775	$0.75 –$0.775
24-26 fuel oil (per bbl.)	$0.50 –$0.575	$0.525–$0.575	$0.525–$0.575
18-22 fuel oil, low sulfur (per bbl.)	$0.40 –$0.45	$0.425–$0.475	$0.425–$0.475
18-22 fuel oil, high sulfur zero (per bbl.)	$0.425–$0.475	$0.45 –$0.475	$0.45 –$0.50
14-16 fuel oil (per bbl.)	$0.35 –$0.40	$0.375–$0.425	$0.375–$0.425

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

†Over 45% benzol equivalent. Prices represent quotations and sales.

WICHITA, Kan.—O. C. Shaner, Kansas City, who was formerly on the sales force of the Skelly Oil Co., has joined the Derby Oil & Refining Corp. Mr. Shaner will cover a part of Nebraska, Iowa, Missouri and Kansas.

SUPERIOR, Neb.—J. O. Hill, who recently completed a modern one-stop here, added a bulk and service station to his facilities when he purchased recently the Harvey Oil Co., Oak, Neb.

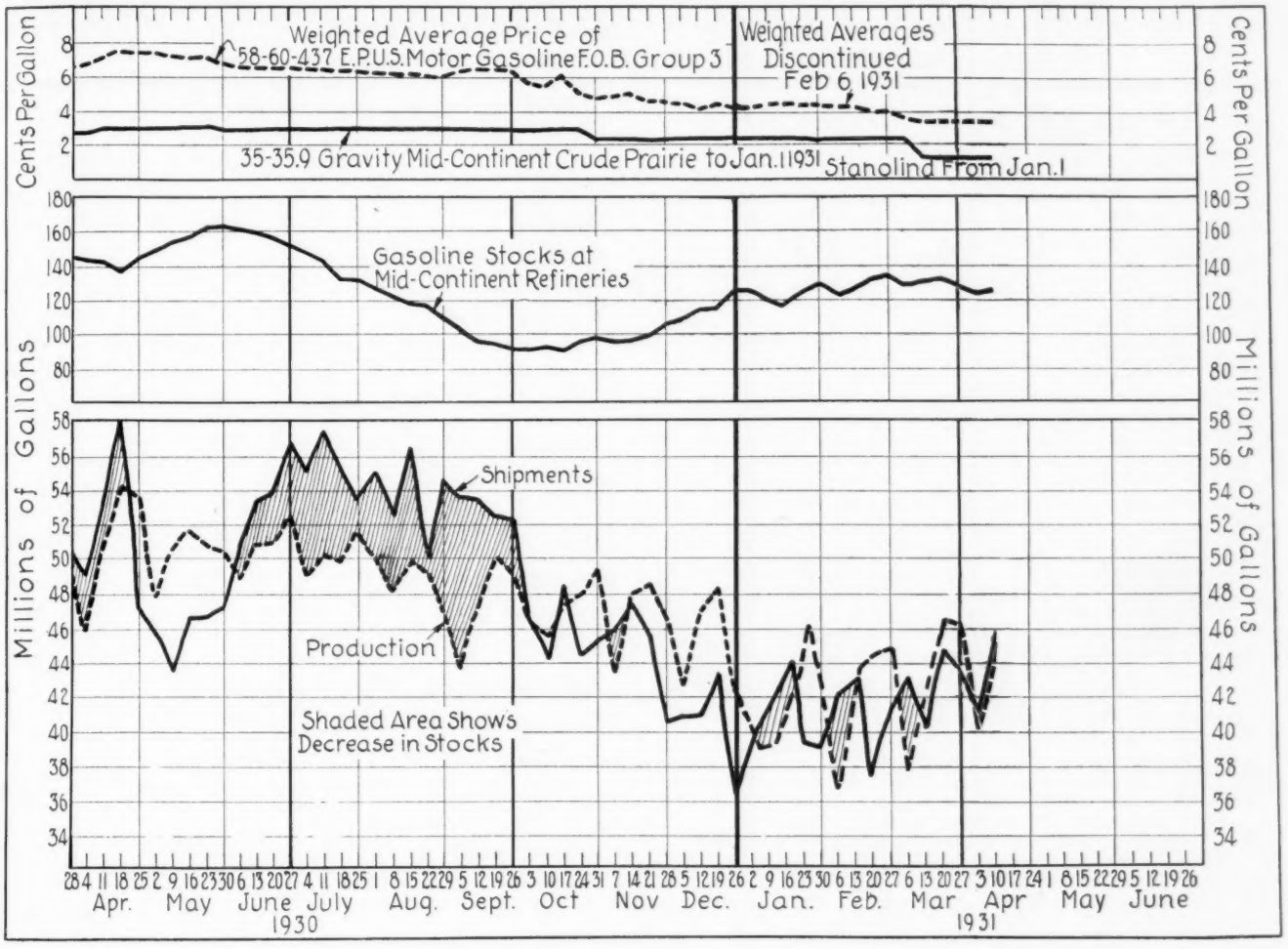
CHICAGO—John Hunter, one of the Hunter brothers who holds the world's endurance record for airplane flying, is pilot for the Deep Rock Oil Corp. Fokker airplane.

RICHMOND, Va.—A prize of $100 has been offered by the Tuckahoe Garden Club here to the gasoline service station in Richmond which beautifies his station most successfully with trees, shrubs, flowers and other landscaping effects during 1931. The contest begins May 1 and ends May 1, 1932.

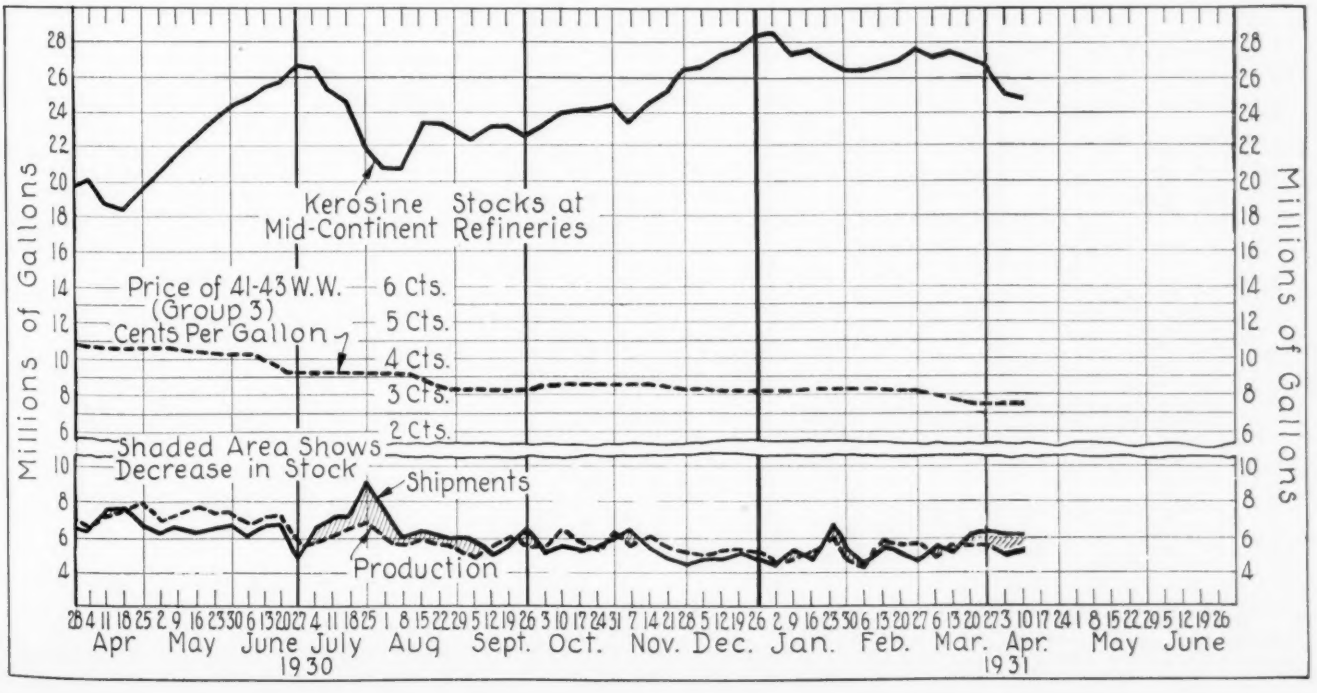
TULSA—W. W. Scheumann, recently with the Cities Service Refining Co. at Boston, has been transferred to Okmulgee, Okla., as chief chemist of the Empire Oil & Refining Co.'s Mid-Continent refining research and control laboratories. He succeeds A. L. Davis, who has gone to New York with the H. L. Dougherty Co.'s research department.

Barometer of Mid-Continent Refinery Market—Week Ending April 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Weighted Average Price of 58-60-437 E.P.U.S. Motor Gasoline F.O.B. Group 3
Weighted Averages Discontinued Feb 6 1931
35-35.9 Gravity Mid-Continent Crude Prairie to Jan. 1 1931
Stanolind From Jan. 1
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Shipments
Production
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct Nov Dec. Jan. Feb. Mar Apr May June
1930
1931

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 90



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices April 13	Prices April 6	Prices March 30
48-50 450 e.p. naphtha...	3.125– 3.375	3.50 – 3.75	3.50 – 3.75
50-52 450 e.p. naphtha...	3.125– 3.375	3.50 – 3.75	3.50 – 3.75
56-58 450 e.p. gasoline...	3.125– 3.375	3.50 – 3.625	3.50 – 3.625
58-60 450 e.p. gasoline...	3.125– 3.375	3.50 – 3.625	3.50 – 3.625
58-60 U.S. Motor 437 e.p.	3.375– 3.875	3.50 – 4.00	3.50 – 4.00
60-62 437 e.p. gasoline...	3.50 – 4.00	3.625– 4.125	3.625– 4.125
60-62 400 e.p. gasoline...	3.625– 4.125	3.75 – 4.25	3.75 – 4.25
64-66 390 e.p. gasoline...	4.00 – 4.25	4.25	4.25
64-66 375 e.p. gasoline...	4.25	4.25 – 4.50	4.25 – 4.50
68-70 350-360 e.p. gasoline	4.625	4.75 – 4.875	4.75 – 4.875
‡Domestic Aviation Gasoline.....	5.25 – 6.00	5.25 – 6.00	5.25 – 6.00

‡Prices based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% rec. at 221°; 90% at 311°, 96% at 347°; end point, 374°F. Fighting grade in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha.....	5.125– 5.50	5.125– 5.50	5.25 – 5.50
54-56 Naphtha.....	5.125– 5.50	5.125– 5.50	5.25 – 5.50
58-60 U.S. Motor 437 e.p.	5.125– 5.50	5.25 – 5.50	5.25 – 5.50
60-62 400-410 e.p. gasoline	5.375– 5.625	5.50 – 5.75	5.625– 6.00
64-66 390 e.p. gasoline...	5.75 – 6.25	6.00 – 6.25	6.00 – 6.25
68-70 350-360 e.p.....	6.50 – 7.00	6.75 – 7.25	6.75 – 7.25

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline			
Ohio, delivery at any point.....	*8.00	8.00	8.00

KANSAS (F. o. b. refinery Kansas destination)

58-60 U.S. Motor 437 e.p.	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
60-62 437 e.p. gasoline...	4.125– 4.375	4.125– 4.375	4.125– 4.375
60-62 400 e.p. gasoline...	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
64-66 375 e.p. gasoline...	4.75 – 5.00	4.75 – 5.00	5.00

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline...	3.00 – 3.25	3.375– 3.50	3.50
58-60 450 e.p. gasoline...	3.00 – 3.25	3.375– 3.50	3.50
58-60 U.S. Motor 437 e.p.	3.375– 3.625	3.375– 3.625	3.50 – 3.75
60-62 400 e.p. gasoline...	3.625– 4.00	3.625– 4.00	3.625– 4.00
64-66 390 e.p. gasoline...	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
64-66 375 e.p. gasoline...	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
68-70 350-360 e.p. gasoline	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha.....	3.375– 3.50	3.375– 3.50	3.375– 3.50
58-60 437 e.p. gasoline...	3.375– 3.50	3.375– 3.50	3.375– 3.625
58-60 U.S. Motor 437 e.p.	3.375– 3.625	3.375– 3.625	3.50 – 3.75

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor 437 e.p.	4.00	4.00	4.00

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	4.00	4.00	4.00

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

54-58 U.S. Motor 437 e.p.	3.25 – 4.25	3.25 – 4.50	3.75 – 4.25
54-58 U.S. Motor, for outside state shipment....	3.75 – 4.25	3.25 – 4.50	3.75 – 4.25
58-61 375-400 e.p. gasoline	4.50 – 5.25	4.50 – 5.00	4.75 – 5.50
42-45 Engine Distillate 445-480 e.p.....	3.75 – 4.25	3.75 – 4.50	3.75 – 4.25

NATURAL GASOLINE

(Note: End point of all grades, not over 375F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery.....	2.125– 2.25	2.25	2.25 – 2.50
Grade A, 72-79.9, 90% Recovery.....	2.25 – 2.375	2.375– 2.50	2.50 – 2.625
Grade BB, 84-92, 85% Recovery.....	1.875– 2.00	1.875– 2.00	2.125– 2.25
Grade B, 76-83.9, 85% Recovery.....	2.00 – 2.125	2.125	2.25
Grade C, 80-92, 78% Recovery.....	1.875	1.875– 2.00	2.00 – 2.25

†Prices nominal ††Only one refiner quoting *Quotations only

NORTH TEXAS (F. o. b. Breckenridge)

	Prices April 13	Prices April 6	Prices March 30
Grade AA, 80-87.9, 90% Recovery.....	2.125– 2.25	2.25	2.25 – 2.50
Grade A, 72-79.9, 90% Recovery.....	2.25 – 2.375	2.375– 2.50	2.50 – 2.625
Grade BB, 84-92, 85% Recovery.....	1.875– 2.00	1.875– 2.00	2.125– 2.25
Grade B, 76-83.9, 85% Recovery.....	2.00 – 2.125	2.125	2.25
Grade C, 80-92, 78% Recovery.....	1.875	1.875– 2.00	2.00 – 2.25

NORTH LOUISIANA (F. o. b. Monroe District)

Grade AA.....	†2.25	†2.25	†2.50
Grade BB.....	†2.00	†2.00	†2.25
Grade C.....	†1.875	†2.00	†2.25

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. for blending.....	2.75 – 3.25	3.25 – 4.00	3.50 – 4.25

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w.w. kerosine.....	4.375– 4.75	4.50 – 4.75	4.50 – 4.75
46 w.w. kerosine.....	4.625– 5.00	4.75 – 5.25	4.75 – 5.25
47 w.w. kerosine.....	4.875– 5.125	5.00 – 5.25	5.00 – 5.25
300 mineral seal.....	5.25 – 5.50	5.25 – 5.50	5.25 – 5.50

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w.w. kerosine.....	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
42-44 w.w. kerosine.....	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25

KANSAS (F. o. b. refinery Kansas destination)

41-43 w.w. kerosine.....	3.125– 3.25	3.25	3.25
42-44 w.w. kerosine.....	3.375– 3.50	3.50	3.50

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w.w. kerosine.....	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
41-43 w.w. kerosine.....	2.625– 2.875	2.625– 2.875	2.75 – 3.00

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w.w. kerosine.....	3.50	3.50	3.50
42-44 w.w. kerosine.....	3.75	3.75	3.75

ARKANSAS (Ark., N. La. and Miss. destination)

41-43 w.w. kerosine.....	3.50	3.50	3.50

CALIFORNIA (F. o. b. California refineries)

38-40 w.w. kerosine.....	4.00 – 5.00	4.00 – 4.50	4.75 – 5.50

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.		(Viscosity at 70° F.)	
200 No. 3 Assoc. Filt....	22.00 –23.00	†22.00 –23.00	†22.00 –23.00
180 No. 3 Assoc. Filt....	19.00 –20.00	†19.00 –20.00	†19.00 –20.00
150 No. 3 Assoc. Filt....	17.00 –18.00	†17.00 –18.00	†17.00 –18.00

Note: Low cold test neutral oils are quoted approximately 6c per gal higher than prices shown above.

		(Non Viscous)	
34 Grav. 330-340 Flash...	5.25 – 6.00	5.25 – 6.00	5.50 – 6.00

****MID-CONTINENT** (F. o. b. Mid-Continent refineries)

Vis. Color		(Viscosity at 100° F.)	
100—No. 2.....	5.25	5.25	5.25
150—No. 3.....	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
150—No. 4.....	6.50	6.50	6.50
180—No. 3.....	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 4.....	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
180—No. 5.....	7.50	7.50	7.50
200—No. 3.....	9.50	9.50	9.50
200—No. 4.....	8.50	8.50	8.50
200—No. 5.....	8.25	8.25	8.25
220—No. 3.....	10.00 –10.50	10.00 –10.50	10.00 –10.50
220—No. 4.....	9.75 –10.25	9.75 –10.25	9.75 –10.25
220—No. 5.....	10.00 –10.25	10.00 –10.25	10.00 –10.25
240—No. 3.....	12.00	12.00	12.00
240—No. 4.....	10.50	10.50	10.50
240—No. 5.....	10.50 –11.00	10.50 –11.00	10.50 –11.00
280—No. 3.....	14.00	14.00	14.00
280—No. 4.....	13.00	13.00	13.00
280—No. 5.....	12.00	12.00	12.00

Note: Quotations for 0 to 10 cold test neutral oils are 1 to 2 cents higher depending on the grade.

****Prices represent Quotations and Sales.**

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis. Color	Prices April 13	Prices April 6	Prices March 30
	(Viscosity at 100° F., pour test 0)		
100—No. 2 Pale	5.50 – 6.25	5.50 – 6.25	5.50 – 6.25
200—No. 3 Pale	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 3 Pale	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
500—No. 3½ Pale	10.00 –10.50	10.00 –10.50	10.00 –10.50
750—No. 4 Pale	11.50 –12.50	11.50 –12.50	11.50 –12.50
1200—No. 4 Pale	14.50 –15.00	14.50 –15.00	14.50 –15.00
2000—No. 4-5 Pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200—No. 5½ Red Oil	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
300—No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
500—No. 6 Red Oil	9.00 –10.00	9.00 –10.00	9.00 –10.00
750—No. 6 Red Oil	11.25 –11.75	11.25 –11.75	11.25 –11.75
1200—No. 5-6 Red Oil	13.50 –14.00	13.50 –14.00	13.50 –14.00
2000—No. 6 Plus Red Oil	15.50 –16.00	15.50 –16.00	15.50 –16.00

‡CALIFORNIA (F. o. b. California refineries)

Vis. Color	(Viscosity at 100° F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50	11.50	11.50
300—No. 3	13.00	13.00	13.00
450—No. 3	15.50	15.50	15.50
550—No. 3	16.50	16.50	16.50
600—No. 3	17.00	17.00	17.00
200—No. 5	11.00	11.00	11.00
300—No. 5	12.00	12.00	12.00
400—No. 5	14.00	14.00	14.00
500—No. 5	15.00	15.00	15.00
600—No. 5	16.00	16.00	16.00
700—No. 7	18.00	18.00	18.00

‡Neutral oils not manufactured commercially in California.

CYLINDER STOCKS

MID-CONTINENT (F. o. b. Mid-Continent refineries)

(Cylinder stock prices represent quotations and sales to domestic jobbers only).

190-200 Vis. D at 210° Brt. St.	20.00	23.00	23.00
150-160 Vis. D at 210° Brt. St., 0-10 cold test	14.50 –16.00	16.00 –18.00	17.50 –18.00
150-160 Vis. D at 210° Brt. St., 10-25 cold test	14.50 –15.00	15.00 –16.00	15.00 –17.00
150-160 Vis. D Brt. Stock, 25-40 cold test	14.00 –14.50	14.50 –15.00	15.00
150-160 Vis. E 210° Brt. St.	13.50 –14.50	15.00 –16.00	15.00 –16.00
600 St. Ref. Olive Green	6.00 – 8.00	6.00 – 8.00	6.00 – 8.00
600 St. Ref. Dark Green	4.50 – 5.50	4.50 – 5.50	4.50 – 5.50
Black Oil	4.00 – 5.00	4.00 – 5.00	4.00 – 5.00

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	8.25 – 8.75	8.25 – 8.75	8.25 – 8.75
650 Steam Refined	11.50 –12.00	11.50 –12.00	11.50 –12.50
600 Flash	12.50 –13.50	12.50 –13.50	13.00 –14.00
630 Flash	18.00 –20.00	18.00 –20.00	18.50 –20.00
600 Warren E	12.00 –13.00	12.00 –13.00	12.00 –13.00
600 Oil City E		†12.00 –12.50	†12.00 –12.50
600 D Filtered	†14.50 –15.00	†14.50 –15.00	†14.50 –15.00
Cold Test Stocks, 140-150 vis. at 210°, 540-550 flash, No. 8 color, ‡20 pour test and below	18.00 –19.00	18.50 –19.00	18.50 –19.00
No. 8 color, ‡25 and 35 pour test	18.00 –19.00	18.00 –19.00	18.00 –19.00
No. 8 color, ‡40 pour test and above	17.50 –18.00	17.50 –18.00	18.00 –19.00

‡Beginning March 16, pour tests changed to those shown above. Were formerly: 25 pour test; 25-35 pour test; and above 35 pour test, respectively.

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale a.m.p.	2.25	2.25 – 2.375	2.25 – 2.375
124-126 white crude scale, a.m.p.	2.25	2.25 – 2.375	2.25 – 2.375

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)

124-126 White Crude Scale, a.m.p.	2.00 – 2.25	2.00 – 2.125	2.00

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	2.875– 3.25	2.875– 3.25	2.875– 3.25
30-34 fuel oil	2.75 – 3.00	2.875– 3.00	3.00 – 3.25
28-32 fuel oil	2.75 – 3.00	2.875– 3.00	3.00 – 3.25

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices April 13	Prices April 6	Prices March 30
38-40 straw distillate	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
36-38 straw distillate	2.125– 2.25	2.25 – 2.375	2.25 – 2.375
32-36 straw gas oil	2.00 – 2.125	2.00 – 2.25	2.00 – 2.25
32-36 straw gas oil zero	2.125– 2.375	2.25 – 2.375	2.25 – 2.375
32-36 dark gas oil	1.75	1.75	1.75
32-36 dark gas oil zero	2.00 – 2.125	2.00 – 2.25	2.00 – 2.25
28-30 zero fuel oil(per bbl.)	$0.725–$0.775	$0.775–$0.825	$0.775–$0.825
28-30 fuel oil (per bbl.)	$0.70 –$0.75	$0.75 –$0.80	$0.75 –$0.80
26-28 fuel oil (per bbl.)	$0.60 –$0.70	$0.65 –$0.70	$0.65 –$0.70
24-26 fuel oil (per bbl.)	$0.50 –$0.55	$0.50 –$0.55	$0.50 –$0.55
22-26 fuel oil (per bbl.)	$0.475–$0.50	$0.475–$0.50	$0.475–$0.50
18-22 fuel oil (per bbl.)	$0.425–$0.45	$0.425–$0.45	$0.425–$0.45
16-20 fuel oil (per bbl.)	$0.375–$0.425	$0.375–$0.425	$0.375–$0.425
14-16 fuel oil (per bbl.)	$0.35 –$0.40	$0.35 –$0.40	$0.35 –$0.40

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
36-38 straw distillate	2.50 – 2.75	2.625– 2.75	2.75
32-36 straw gas oil	2.375– 2.625	2.50 – 2.625	2.50 – 2.625
18-22 fuel oil (per bbl.)	$0.50 –$0.60	$0.50 –$0.60	$0.50 –$0.60
10-14 fuel oil (per bbl.)	$0.40 –$0.45	$0.40 –$0.45	$0.425–$0.50

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
38-40 p.w.treated distillate	2.25 – 2.625	2.25 – 2.625	2.375– 2.625
32-36 gas oil, cracked	1.75 – 2.00	1.75 – 2.00	1.75 – 2.00
32-36 St. reduced gas oil	1.50 – 1.75	1.50 – 1.75	1.50 – 1.75
24-26 fuel oil (per bbl.)	$0.375–$0.425	$0.375–$0.425	$0.375–$0.425
20-24 fuel oil (per bbl.)	$0.35 –$0.40	$0.35 –$0.40	$0.35 –$0.40
18-22 fuel oil (per bbl.)	$0.325–$0.35	$0.325–$0.35	$0.325–$0.35

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment.

34-38 gas oil	1.875– 2.00	1.875– 2.00	2.00
30-32 gas oil	1.50	1.50	1.50
28-30 zero gas oil	2.00 – 2.125	2.00 – 2.125	2.00 – 2.25
18-22 fuel oil (per bbl.)	$0.375–$0.40	$0.375–$0.40	$0.375–$0.40

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	2.375– 2.50	2.375– 2.50	2.50
32-36 gas oil, straw	2.375– 2.50	2.375– 2.50	2.50
14-16 fuel oil (per bbl.)	$0.60 –$0.675	$0.60 –$0.70	$0.60 –$0.70

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
32-36 dark gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
28-30 gas oil	2.125– 2.25	2.125– 2.25	2.125– 2.25
20-24 fuel oil (per bbl.)	$0.75	$0.75	$0.75
9-12 fuel oil (per bbl.)	$0.65	$0.65	$0.65
Black oil	3.25	3.25	3.25

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.35 –$0.50	$0.35 –$0.50	$0.45 –$0.55
14-18 Bunker oil (per bbl.)	$0.55 –$0.80	$0.55 –$0.80	$0.58 –$0.70
30-34 gas oil (per bbl.)	$0.70 –$0.80	$0.70 –$0.80	$0.80 –$0.90
27 Plus Diesel oil (per bbl.)	$0.70 –$0.80	$0.70 –$0.80	$0.75 –$0.85

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. Penna. refinery. In tank cars ½c to ¾c per pound less.) Two refiners quoting.

Snow White	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
Lily White	6.125– 6.25	6.125– 6.25	6.125– 6.25
Cream White	5.125– 5.25	5.125– 5.25	5.125– 5.25
Light Amber	2.875– 3.00	2.875– 3.00	2.875– 3.00
Amber	2.625– 2.75	2.625– 2.75	2.625– 2.75
Red	2.00 – 2.50	2.00 – 2.50	2.00 – 2.50

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

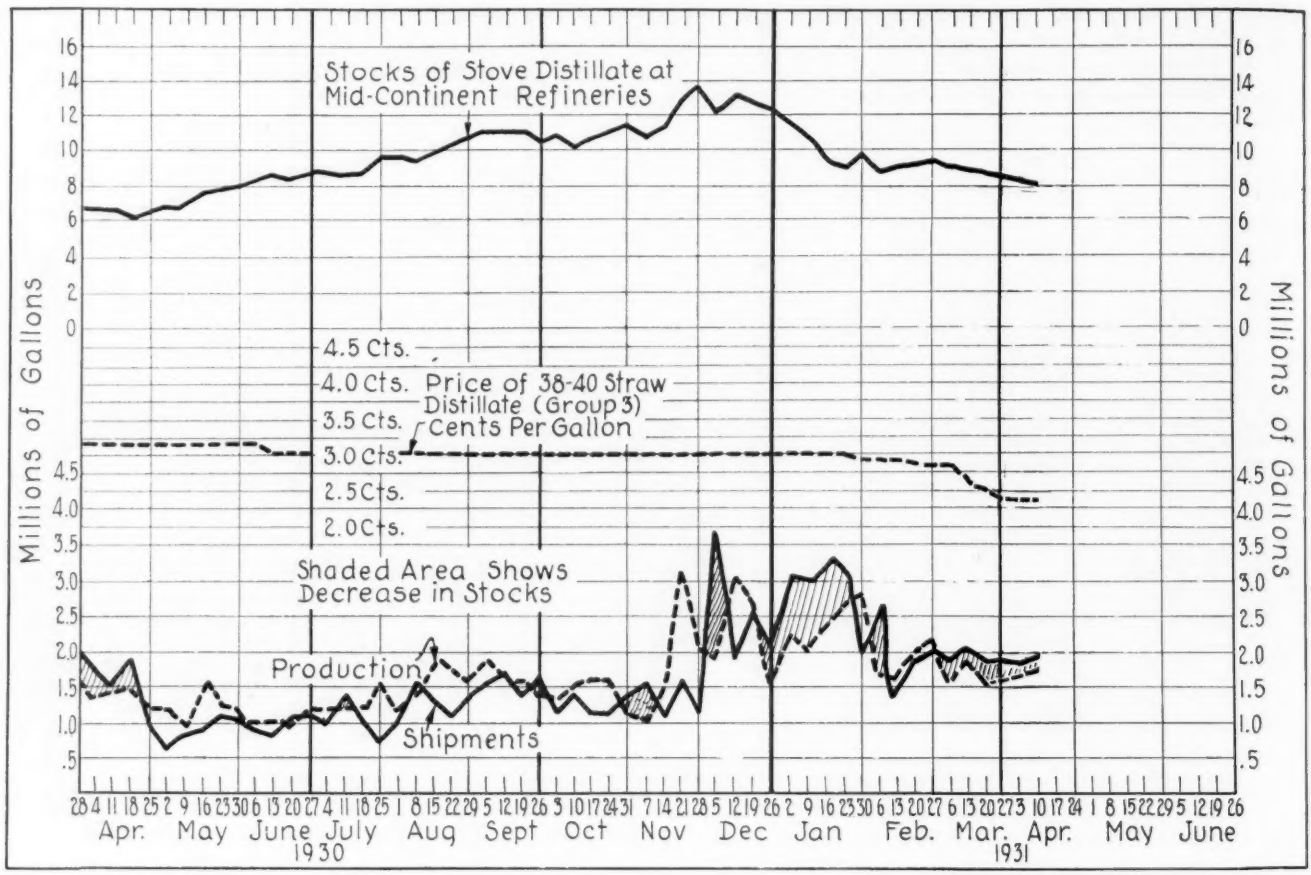
(Per ton in car lots)

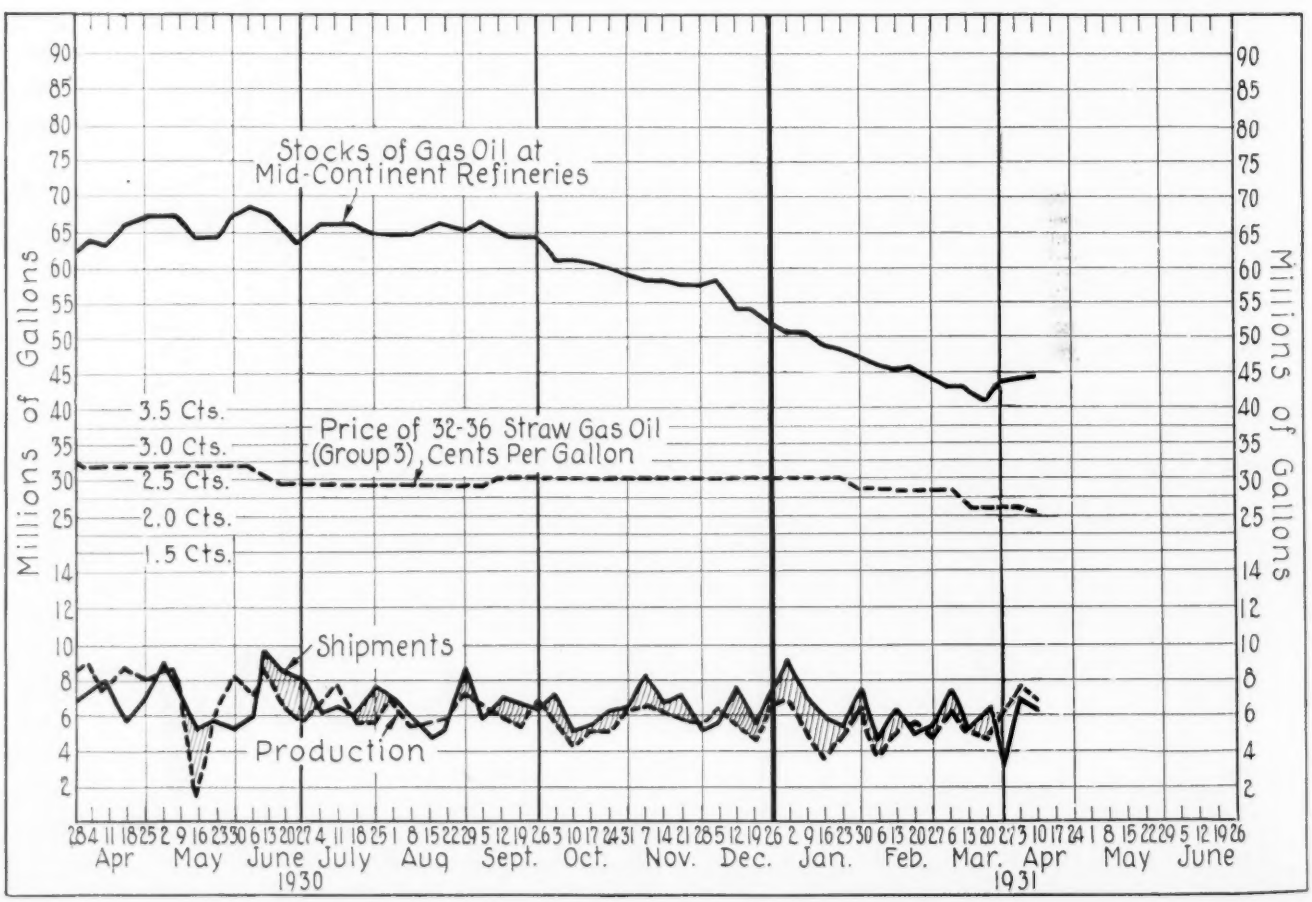
Lump	$4.50 –$5.00	$4.50 –$5.00	$4.50 –$5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

****Prices represent Quotations and Sales**

Barometer of Mid-Continent Refinery Market—Week Ending April 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News

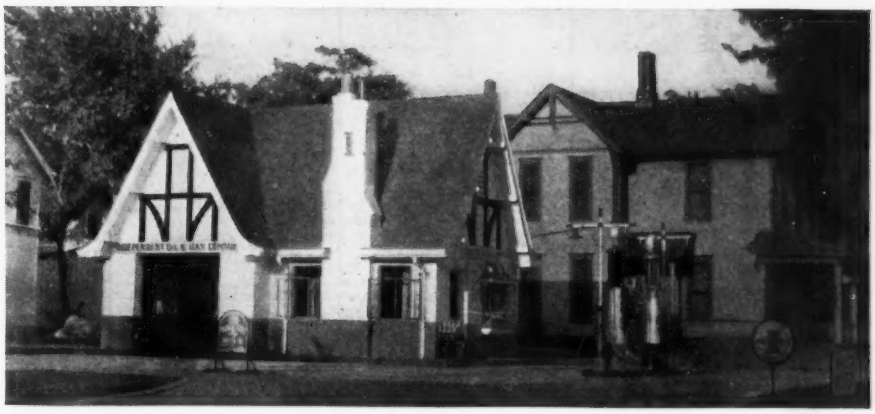




DULUX FINISH keeps its COLOR AND GLOSS

"50% to 100% Longer?

YES . . . Three-year field tests indicate this superiority over ordinary oil and varnish types of finishes where appearance is important.



A white that stays white regardless of climate is ideal for service stations such as this. And Dulux gives that white.

HOW to keep filling stations looking spick and span? How to finish curb pumps and lubesters so as to keep them looking bright and colorful? How to finish tank wagons and other marketing equipment which meets the public eye constantly?

There is public good will involved here. And your maintenance costs depend on your answer. For these very reasons, du Pont offers Dulux Finish.

Dulux is not entirely new to the oil industry. Leading companies are using it now and plan to standardize on it for all their equipment. But first du Pont spent thousands of dollars testing Dulux under conditions of actual service.

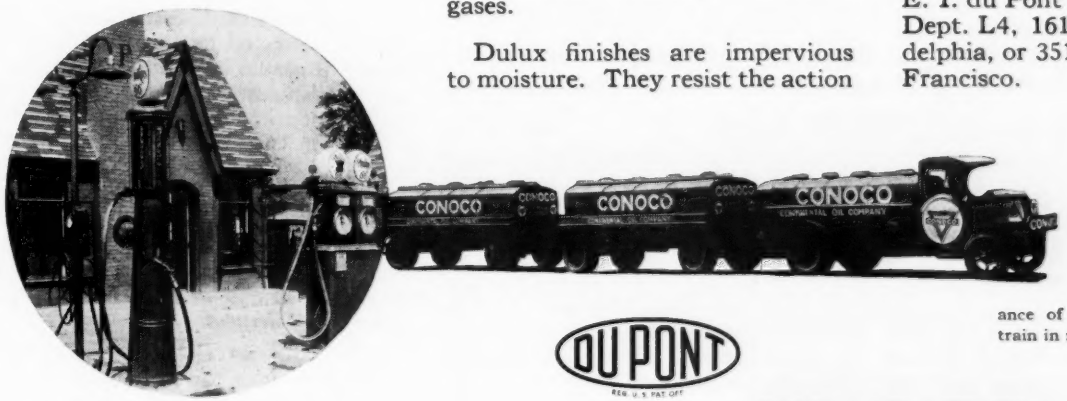
One thing all tests showed — that Dulux retains its color and gloss and original appearance 50% to 100% longer than the types of finishes in use.

And the second important point is that Dulux lasts 50% to 100% longer than ordinary finishes.

DULUX FINISHES wear away so slowly that they still give full protection to the covered surface after ordinary films have cracked, peeled, scaled and exposed the wood or metal underneath. They are impervious to moisture. They resist to a remarkable degree the action of petroleum, petroleum solvents, and ordinary destructive gases.

Dulux finishes are impervious to moisture. They resist the action of petroleum solvents, destructive gases, and the film-shattering ultra-violet rays of sunlight.

In this year of striving to cut costs and save money, Dulux answers a great need in the oil industry. Let us tell you what we are telling other oil men about this remarkable new chemical development — as important as was Duco for the automotive industry. Your request will bring a technical bulletin on Dulux which contains some of the most interesting reading you ever received. Write E. I. du Pont de Nemours & Co., Dept. L4, 1616 Walnut St., Philadelphia, or 351 California St., San Francisco.



Linking low distribution costs to lower maintenance costs. The Continental Oil Company profits also by the improved appearance of this prize truck and trailer train in red and white Dulux.

The Phillips Petroleum Company was one of the first in the oil industry to adopt Dulux for all equipment, from refineries right down to filling stations.

DU PONT

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DULUX

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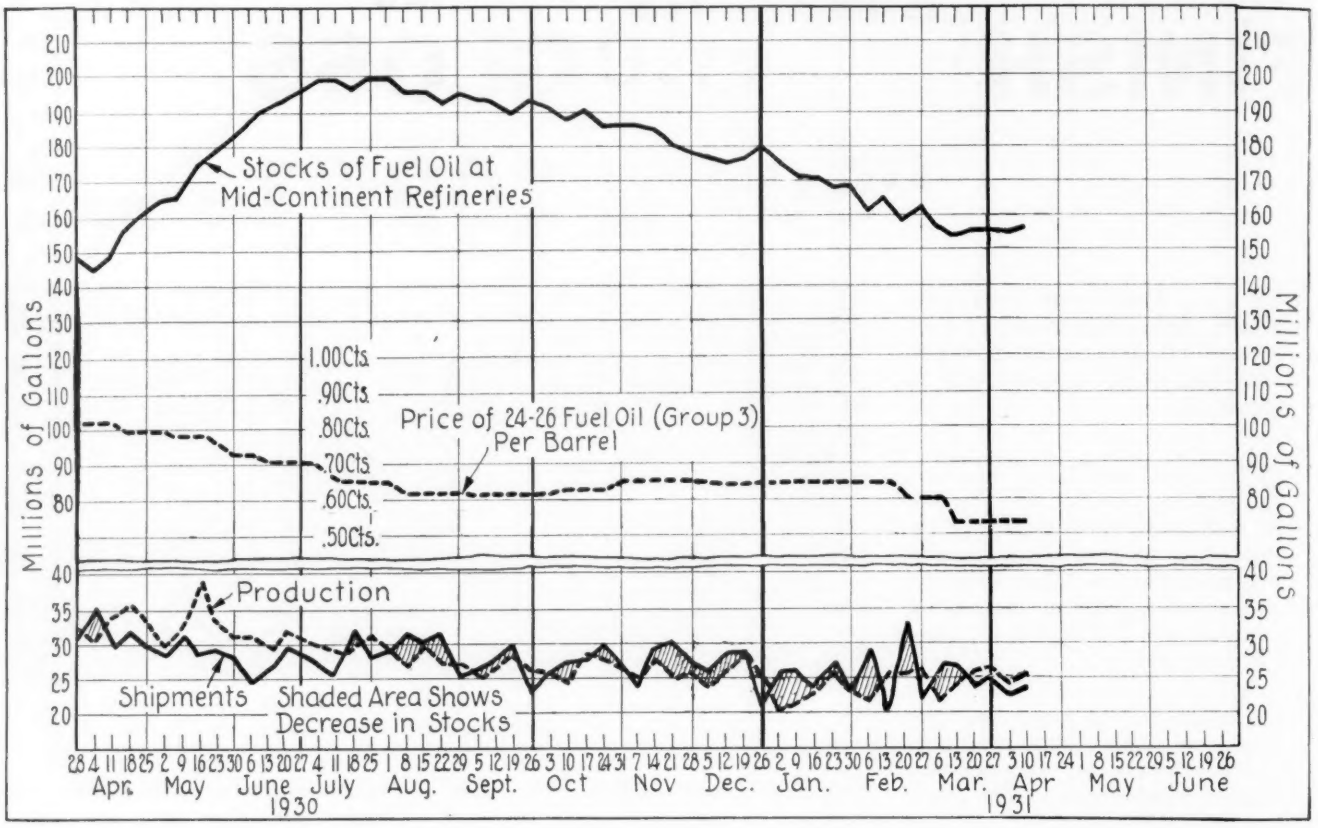
Barometer of Mid-Continent Refinery Market—Week Ending April 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



California Refinery Market

Lower Prices Attract Cargo Inquiries

LOS ANGELES, April 11

LOW prices posted by major purchasing companies for high gravity crude oils on the Pacific coast have encouraged Atlantic seaboard and foreign buyers to renew inquiries for bulk quotations on California products.

Although west coast refiners were still out of line when it comes to competing with Gulf quotations, it was the opinion of the trade that this condition was due for an immediate change as exporting companies seek to regain some of their lost cargo business.

Such was indicated during the past week when an independent refiner was reported willing to meet competitive prices at any point. Although actual sales have been few and far between, traders believed U. S. Motor gasoline could be bought at 3.75 to 4 cents on a firm offer, and that it might be possible to shade the former to 3.50 cents where the refiner was cramped for storage space.

Conflicting reports prevailed as to quotations for natural gasoline for export. It was reported a cargo of 96 recovery, 22 pound vapor pressure gasoline, sold recently at 2.75 cents f.o.b. vessel. On the basis of current overproduction and a slack demand for blending stock, quotations ranged from this figure upward to 3.50 cents.

An inquiry was reported for a cargo of crude oil at the market price for shipment to the east coast. Although the sulfurous Playa del Rey crude was available at prices of 10 to 20 cents per barrel, oil or 30 gravity or better from other Los Angeles Basin or San Joaquin Valley fields was bringing 10 to 15 cents above the market price of $0.35 per barrel.

Standard of California adjusted the gasoline tank wagon price at various points along the Pacific coast early in the week in order to bring retail prices in these areas in line with those in the Los Angeles and San Francisco districts. The reductions ranged from 2.50 cents at San Diego, to 1 cent at Santa Barbara, Bakersfield, Portland, Tacoma, and Seattle. The Spokane price was increased 2 cents.

Domestic gasoline buying continued active with quotations ranging from 3.25 to 4.25 cents for movement in the state, exclusive of tax, and into adjoining non-competitive states. For shipment into Arizona, Nevada, Utah, and Idaho, prices ranged from 3.75 to 4.25 cents. Retail gasoline prices in the Los Angeles Basin averaged 9.50 cents with a large number of stations selling major brands at 8.50 cents and with major operated stations posting a price of 10.50 cents.

Warmer weather caused a let up in the demand for kerosine and refiners offered it at 4 to 5 cents and anticipated lower prices within the week. Kerosine-distillate in tank car lots was reported available at 2.50 to 3.25 cents under very little demand.

Practically no change was reported in quotations for heavy oils. Fuel oil moved slowly at $0.40 to $0.50 with some oil quoted 5 cents above and below this spread. Gas and diesel oils ranged from $0.70 to $0.80 for 30-34 gravity and upward of $0.90 to $0.95 for 36 plus.

Pennsylvania Markets

Most Products Quoted Lower

CLEVELAND, April 13.—Prices of the majority of products were lower in the Pennsylvania market last week. Neutral oils were fairly steady in price but other commodities lost considerable ground. Motor oil buying was fairly satisfactory, according to reports, but buying of other products lagged.

Competition for gasoline business was unusually keen. Many refiners reported their stocks were increasing and price concessions were made in many instances to get immediate shipping instructions. Distress sales of U. S. Motor were made at around 5 cents a gallon with general market prices ranging from 5.125 up to 5.50 cents. There was less demand for the high gravity gasolines due to the warmer weather and prices were off 0.25 to 0.5 cent a gallon.

Kerosine and fuel oil were sluggish and prices for all grades receded 0.125 cent a gallon.

Cylinder stocks were only fairly active. Filterable 600 steam refined was freely available at 8.25 cents with bright stock manufacturers reporting occasional purchases at 8 cents a gallon.

Bright stock activity so far this month has been disappointing, according to the reports of several manufacturers. April demand has fallen off considerably from the exceptionally good demand experienced in March. Both the Sharples and cold settled stocks were offered 0.25 to 0.5 cent lower by some sellers. One or two manufacturers, however, reported being sold up for the balance of this month.

Coal Conference in November

PITTSBURGH—The Third International Conference on Bituminous Coal will be held at the Carnegie Institute of Technology, Pittsburgh, November 16 to 21, 1931, according to a recent announcement by Thomas S. Baker, president of the Institute.

The program, which will be announced later, will contain papers on carbonization, liquefaction and gasification of coal; byproducts, and other major phases of the coal industry. Those who wish to submit papers are requested to notify the secretary, Thomas R. Alexander, at Pittsburgh, as soon as possible.

Switzerland in the first nine months of 1930 imported 1,012,000 barrels of gasoline, more than half of which came from the United States. Its second largest imports were from Iraq which shipped 237,500 barrels.

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Eastern Domestic Markets

Gasoline Prices Show Further Declines

Staff Special
NEW YORK, April 11

THE reduction of 0.3 cent in tank wagon and service station prices by the Standard Oil Co. of New Jersey was the principal feature in eastern gasoline markets during the week ended April 11. This price change was made on April 9, and applied to the entire territory of the company.

Several companies offered gasoline at New York harbor and Baltimore at 6 cents per gallon for delivery in tank cars. This price in most instances was 0.5 cent under the prices posted at refineries and terminals a short time ago.

Regular buyers in the New York harbor market who have been confining their purchases to their immediate needs came into the market the past week for larger quantities. Tank car shipments at 6.25 cents became more general as the week advanced. Sizable orders were taken by several companies at 6 cents. Barge lots sold at 5.75 cents.

There also was more activity in the Philadelphia gasoline market. Some sellers in that district reported the demand for regular U. S. Motor at 6.50 cents per gallon was quite satisfactory. Some material, however, was available at 6.25 cents.

Tank car prices at Baltimore eased off a 0.25 cent the past week. Regular U. S. Motor was offered in sizable quantities at 6 cents, and the going price was quite generally accepted to be at that figure. Considerable apprehension was expressed in regard to a grade of gasoline marketed by a Baltimore seller, which, although not within the U. S. Motor specifications, was nevertheless finding a ready market at 6 cents. This material was reported to be well suited for blending purposes. One major seller offered regular U. S. Motor at the same price.

The east and Gulf coast gasolines continued to occupy the center of the stage at Baltimore and Philadelphia. The California U. S. Motor failed to regain its one time pre-eminence either from the standpoint of demand or premium price. Sales of this material at New York harbor in tank car lots were few and far between.

There was a fair movement of gasoline under contract in the New England markets, but very little spot activity was reported. Prices remained unchanged at 7 cents, f.o.b. Portland and 6.75 cents at Boston and Providence.

As this is the season for the renewal of fuel oil contracts the suppliers have been busy signing up their customers for next year. The current market has been growing increasingly quiet as warmer weather approaches. The wholesale prices have stood up well in the face of the diminishing demand. The market was generally accepted to be 4.50 cents for gas oil and 5.50 cents for furnace oil in tank car lots. These prices were quoted in both the New England and New York markets.

Kerosine was freely available for 5.75 cents at New York, and it was reported this price might be shaded slightly if large quantities were sought. The posted price for bunker C fuel oil likewise was unchanged at $1.05 per barrel in both the New York and Boston markets.

Diesel oil was posted at $1.75 per barrel at New York harbor and in all seaboard markets to the south.

Gulf Coast Markets

Export Gasoline, Kerosine Prices Lower

Staff Special
NEW YORK, April 11

LOWER export prices for cargo lots of gasoline and kerosine at the Gulf were announced by the major companies the past week. Export shipments were confined to inter-company transactions in all lines of the trade. An order for a cargo of U. S. Motor for North Atlantic shipment was placed at approximately 5.125 cents, delivered.

While the most recent commitments were not lower than prices asked a week or so ago by a few cargo suppliers, it was indicated that prices a shade lower would be accepted on firm offer. Regular U. S. Motor was offered at 4.50 cents generally, and in some quarters it was indicated that 4.25 cents could be done if actual business was to be had. The higher gravity grades were quoted as follows: 60-62, 400 end point, 5 cents; 61-63, 390 end point, 5.25 cents; and 64-66, 375 end point, 5.50 cents.

Kerosine prices were down 0.25 cent. The 44 water white was quoted at 5 cents and the 41-43 prime white grade at 4 cents.

There were no sales reported in the cased goods market. Gas oil was in poor demand with unchanged prices. Cargo lots of Grade C bunker oil were available at approximately $0.62 per barrel in a quiet market.

A New Jersey buyer placed an order for a cargo of U. S. Motor at approximately 5.125 cents, delivered, late in the week. Competition was reported to have been quite keen for this business. On the basis of the current tanker rates, the price figures backs approximately 4.75 cents f.o.b. the Gulf.

Venezuela Crude

No sales were reported in the market for Venezuela crude the past week. While the market price remained largely one of opinion, several elements have recently entered which make it doubtful whether this material will be available in the open market the balance of this year. The recent agreement to cut imports entered into by the four major operators in this field has altered this market considerably. However, it was indicated that foreign business would be accepted at approximately $0.72 per barrel f.o.b. deepwater in the Lake Maracaibo region.

Panuco Crude

The Panuco crude market has been fairly well established at $0.46 per barrel, f.o.b. Tampico. Two cargoes have been reported sold to domestic buyers at this figure.

Wax Markets

Fully Refined Waxes Active

NEW YORK, April 11.—Inquiries for small lots of refined grades of wax were numerous in both the New Orleans and New York markets the past week. Inquiries specified from 15 to 25 tons for prompt shipment to the United Kingdom and South America.

It was reported that the Spanish Monopoly had placed a large order for 125-127 A.m.p. fully refined wax but full details were not obtainable at this writing.

Scale waxes were not in demand in either market.

Service Stations Multiply Faster Than Motors

TULSA, April 11.—Service station gasoline outlets in Cedar Rapids, Iowa increased approximately 35 per cent in 1930, while the motor vehicle registration for the county in which that city is located increased approximately 4 per cent, according to a survey recently made for Cities Service Oil Co.

At the close of 1929 there were 78 retail outlets in that city, according to the survey. Of this number 22 were independently owned and operated. The 1929 total car registration for the city was 15,260 and the total truck registration was 1420. Including the registrations in the county, the car total was 22,505 and the truck registration total 2156, making 24,661 motor vehicles registered.

During 1930 there were 30 new outlets completed, of which four were independently operated, and six were cut price stations. This gave a total of 108 retail outlets at the end of 1930.

The total car registration in the city at the end of 1930 was 14,972, a decrease of 288. The truck registration in the city was 1871, an increase of 451. Total car registration for the county was 23,033, an increase of 528, and the total truck registration for the county was 2673, an increase of 517. The increase in total registration, with the 1930 figure at 25,706, was 1045.

Correction

Attention has been called to information published in the refinery directory of National Petroleum News Oil Price Handbook for 1930, page 193, in which it was indicated under active plants in Montana that the Maple Leaf Oil & Refining Co., Ltd. was a subsidiary of the Northwest Stellarene Co. and the Shelby Pipe Line & Refining Co.; and that the Montana Producers Purchasing Co., Inc., of Shelby, was affiliated with the Western Oil & Fuel Co., Minneapolis.

H. M. Baskerville, president of the Western company, points out that neither his company nor the Maple Leaf are affiliated in any way with any of the above companies. The Maple Leaf is a subsidiary of the Western Oil & Fuel, operating a skimming plant on the international boundary between Canada and the United States at Coutts, Alta., and Sweetgrass, Mont.

The Western company has headquarters in the Lincoln Bank Bldg., Minneapolis, and branch offices at Tulsa, and at Lethbridge, Alta. In addition to gasoline, kerosine, gas and fuel oils, the company sells road oil, asphalts, creosote oil, lube oils, petroleum coke and alcohol.

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Complete Seaboard Market

(Export Markets for whole year given in OIL HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in some states.)

	Prices April 13	Prices April 6	Prices March 30
U. S. MOTOR GASOLINE			
New York harbor	6.00 – 6.50	6.25 – 6.50	6.25 – 6.50
Portland district	7.00	7.00	7.00
Boston district	6.75	6.75	6.75
Providence district	6.75	6.75	6.75
Philadelphia district	6.25 – 6.50	6.50	6.50
Baltimore district	6.00 – 6.50	6.25 – 6.50	6.50
Norfolk district	6.50	6.50	6.50
Charleston district	6.50	6.50	6.50
Savannah district	6.50	6.50	6.50
Jacksonville district	6.50	6.50	6.50
CALIFORNIA U. S. MOTOR GASOLINE			
New York harbor	†6.50	†6.50	†6.75
Philadelphia district	†6.50	†6.50	†6.75
Baltimore district	†6.50	†6.50	†6.50
‡DOMESTIC AVIATION GASOLINE			
New York harbor	10.00 –12.00	10.00 –12.00	10.00 –12.00
Philadelphia	10.00 –12.00	10.00 –12.00	10.00 –12.00
Baltimore	11.00 –12.00	11.00 –12.00	11.00 –12.00
Boston	11.50 –13.00	11.50 –13.00	11.50 –13.00

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F. and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347° end point 374°F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

WATER WHITE KEROSINE			
New York harbor	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
Philadelphia district	6.00	6.00	6.00
Baltimore district	6.00	6.00	6.00
GAS OIL: 28-34 Gravity			
New York harbor	†4.50	4.50	4.50
Boston district	4.50	4.50	4.50
FURNACE OIL: 36-40 Gravity			
New York harbor	5.50	5.50	5.50
Boston district	5.50	5.50	5.50
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$1.75	$1.75	$1.85

†Nominal.

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	April 13	April 6	March 30
CYLINDER OILS (Pennsylvania Products)			
Bright stock, No. 8 color	23.50 –25.00	23.50 –25.00	23.50 –25.00
Bright stock, No. 6½ color diluted	22.50 –24.00	22.50 –24.00	22.50 –24.00
600 D filtered	22.50 –25.00	22.50 –25.00	22.50 –25.00
600 Warren E filtered	18.00 –21.00	18.00 –21.00	18.00 –21.00
600 stm. refd. unfiltered	14.50 –16.00	14.50 –16.00	14.50 –16.00
650 stm. refd. unfiltered	18.00 –20.00	18.00 –20.00	18.00 –20.00
600 flash steam refined	18.50 –20.00	18.50 –20.00	18.50 –20.00
630 flash, steam refined	24.00 –26.00	24.00 –26.00	24.00 –26.00
RED PARAFFIN OILS (Vis. 100°)			
300 vis. No. 6½ color	17.00 –20.00	17.00 –20.00	17.00 –20.00
250 vis. No. 6 color	16.50 –17.50	16.50 –17.50	16.50 –17.50
200 vis. No. 6 color	14.75 –17.00	14.75 –17.00	14.75 –17.00
PALE PARAFFIN OILS (Vis. 100°)			
230 vis. No. 3¾ color	21.50	21.50	21.50
180 vis. No. 3¼ color	18.00 –20.00	18.00 –20.00	18.00 –20.00
100 vis. No. 2¼ color	12.50 –15.00	12.50 –15.00	12.50 –15.00

Wax Market

(Melting points are A.M.P. method. Prices in cents per pound, f.a.s. carload lots.)

NEW YORK	April 13	April 6	March 30
124-126 Yellow crude scale	2.15	2.20	2.20
122-124 White crude scale	2.20	2.20 – 2.25	2.20 – 2.25
124-126 White crude scale	2.20	2.20 – 2.25	2.20 – 2.25
123-125 Fully refined	3.25	3.25	3.25
125-127 Fully refined	3.25	3.25 – 3.375	3.25 – 3.375
128-130 Fully refined	3.375– 3.50	3.375– 3.50	3.375– 3.50
130-132 Fully refined	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
133-135 Fully refined	4.375– 4.50	4.375– 4.50	4.375– 4.50
135-137 Fully refined	4.625	4.625– 4.75	4.625– 4.75
NEW ORLEANS			
124-126 Yellow crude scale	2.15	2.15	2.15
122-124 White crude scale	2.20	2.20 – 2.25	2.20 – 2.25
124-126 White crude scale	2.20	2.20 – 2.25	2.20 – 2.25
123-125 Fully refined	3.25	3.25	3.25
125-127 Fully refined	3.25	3.25 – 3.375	3.25 – 3.375
128-130 Fully refined	3.375– 3.50	3.375– 3.50	3.375– 3.50
130-132 Fully refined	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
133-135 Fully refined	4.375	4.375	4.375

Gulf Coast Bulk Market

(Prices are f. o. b. Gulf oil terminals representing sellers' opinions covering bulk shipments of 20,000 barrels or more, for export and / or coastwise shipment unless otherwise noted.)

GASOLINE	Prices April 13	Prices April 6	Prices March 30
U. S. Motor	4.50	4.50 – 5.00	4.50 – 5.00
60-62, 400 e.p.	5.00	4.75 – 5.25	4.75 – 5.25
61-63, 390 e.p.	5.25	5.25 – 5.50	5.25 – 5.50
64-66, 375 e.p.	5.50	5.50 – 5.75	5.50 – 5.75
U. S. Motor, (cases cargoes)	$1.60	$1.60	$1.60
64-66, cases (cargoes)	$1.70 –$1.72	$1.70 –$1.72	$1.70 –$1.72
KEROSINE			
44 water white	5.00	5.25	5.25
41-43 prime white	4.00	4.25	4.25
Water white, cases (cargoes)	$1.40	$1.40	$1.40
Prime white, cases (cargoes)	$1.30	$1.30	$1.30
GAS & BUNKER OILS			
*26-30 translucent gas oil	3.00	3.00	3.00
*30 plus translucent gas oil	3.00	3.00	3.00
Grade C bunker oil, for ships' bunkers, per bbl.	$0.90	$0.90	$0.90
Grade C bunker oil, per bbl. in cargoes	$0.62 –$0.65	$0.62 –$0.65	$0.62 –$0.65

*Less than ½ of 1% sulphur.
†Represents sales only.

MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid, per bbl.	$0.46	$0.46	$0.46
Grade C bunker oil for bunkering, taxes paid, per bbl.	$0.90	$0.90	$0.90
VENEZUELA CRUDE			
F. o. b. deepwater, Lake Maracaibo region	$0.72 –$0.76	$0.72 –$0.76	$0.72 –$0.76
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0 Tanker, f. o. b. Gulf oil terminals.)			
100 vis. No. 2 unfiltered pale	4.75 – 5.75	4.75 – 5.75	4.75 – 5.75
200 vis. No. 3 unfiltered pale	6.75 – 8.25	6.75 – 8.25	6.75 – 8.25
300 vis. No. 3 unfiltered pale	7.75 – 9.50	7.75 – 9.50	7.75 – 9.50
500 vis. No. 3½ unfiltered pale	8.75 –10.50	8.75 –10.50	8.75 –10.50
750 vis. No. 4 unfiltered pale	10.25 –12.75	10.25 –12.75	10.25–12.75
1200 vis. No. 4 unfiltered pale	14.00 –16.00	14.00 –16.00	14.00 –16.00
200 vis. No. 5-6 red oil	6.00 – 6.75	6.00 – 6.75	6.00 – 6.75
300 vis. No. 5-6 red oil	7.00 – 7.75	7.00 – 7.75	7.00 – 7.75
500 vis. No. 5-6 red oil	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
750 vis. No. 5-6 red oil	9.25 –11.50	9.25 –11.50	9.25 –11.50
1200 vis. No. 5-6 red oil	13.00 –15.00	13.00 –15.00	13.00 –15.00

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	April 13	April 6	March 30
Gasoline, U. S. Motor, 53-55 Gravity	3.75 – 4.50	4.00 – 4.50	4.25 – 4.75
Gasoline, U. S. Motor-blends and special cuts	4.25 – 4.75	4.50 – 5.00	4.75 – 5.25
Gasoline, 400 e.p. blend	4.75 – 5.25	5.25 – 5.50	5.50
Gas Oil, 30-34 per bbl.	$0.80 –$0.90	$0.85 –$0.90	$0.85 –$0.90
Diesel Oil, 27 plus, per bbl.	$0.80 –$0.90	$0.85 –$0.90	$0.85 –$0.90
Bunker oil, 14-18 per bbl.	$0.62 –$0.72	$0.62 –$0.72	$0.62 –$0.72
Fuel oil, 14-18 per bbl.	$0.55 –$0.70	$0.60 –$0.85	$0.60 –$0.85
Kerosine, 38-40 w.w., 125-150 flash, per gal.	4.00 – 4.50	4.75 – 5.50	4.75 – 5.50
Cased Goods			
Gasoline, U. S. Motor	$1.45 –$1.55	$1.75 –$1.85	$1.75 –$1.85
Gasoline, 400 e.p. blend	$1.55 –$1.65	$1.85 –$2.00	$1.85 –$2.00
Kerosine, 38-40 w.w., 125-150 flash	$1.40 –$1.45	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	April 13	
	Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	21	18
Gulf to U. K. or Continental ports*	10-11	†10
North Atlantic to U. K. or Continental ports*	9/6	†8/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.45-$0.50	$0.45-$0.50
Gulf to North Atlantic ports (not E. of N. Y.)**	14-15	15

*Continental ports in the range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate, for Tampico 2c to 3c per bbl. additional. †Two ports discharged.

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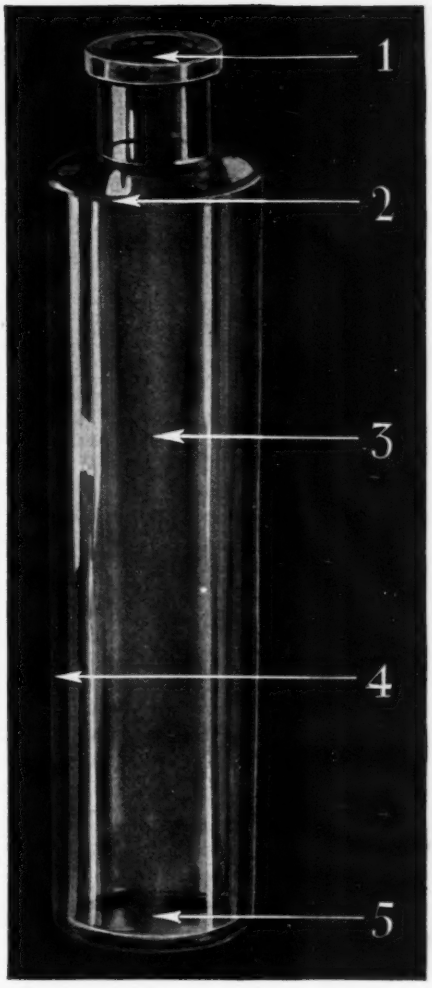
Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE—LUBRICATING OILS
NAPHTHA—GAS—OILS
WAX—PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices:
PITTSBURGH, PA.

District Sales Offices: **New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans**



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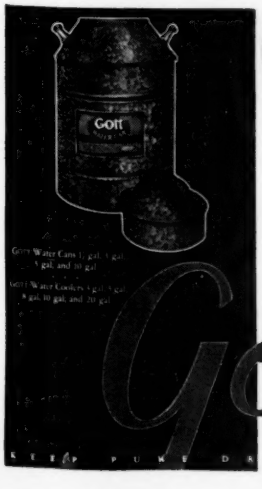
SAMPLE BOTTLES
CHECK THESE 5 POINTS

1. Make sure that the neck and finish permit of perfect corkage. Leaks don't help sales.
2. See that the shoulders are well squared and perfectly formed.
3. Check the side walls for straightness.
4. Make sure that the distribution of glass gives even thickness all around.
5. Insist upon perfect bottoms.

—or buy Owens-Illinois sample oil bottles and let us do this checking for you.

Owens-Illinois Glass Co., Toledo, Ohio

OWENS-ILLINOIS
OIL BOTTLES



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H. P. GOTT MFG. CO. • Winfield, Kansas

KEEP PURE DRINKING WATER ALWAYS HANDY

Tank Wagon, Service Station Markets for Gasoline and Kerosine

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect April 13, 1931, as Posted by Principal Marketing Companies

Latest Changes in Tank Wagon Prices

Gasoline

S. O. New Jersey—T. w. and s. s. cut 3/10c, thru territory, **April 9.**

S. s. only cut 2c, Salisbury, to 18c, **April 6.**

Atlantic Refining—T. w. and s. s. up 1c, thru North Carolina, covering tax increase to 6c, **April 1.**

S. O. Indiana—S. s. only cut 1c, thru territory except St. Louis, Des Moines, Sioux City and Fargo unchanged, **April 11.** Posted t. w. and s. s. prices became the same.

Q. D. A. changed, **April 11:** (reported in detail elsewhere in this issue).

To resellers only, thru territory except in Chicago, and off service station price: on Ethyl gasoline, 3c per gal. discount; on Red Crown, 2.5c per gal.; and on Stanolind Blue gasoline, 1c per gal. In Chicago, Q. D. A. is 1c additional in each instance.

To consumers: thru territory and in Chicago, same rate of discounts as above, but discounts are off tank wagon price, and affect purchases of 1,000 gallons or more per month.

T. w. cut 2c, s. s. cut 3c, St. Louis, both to 10.9c, including taxes, **April 3.**

S. O. Kentucky—T.w. and s.s. cut 2c, Atlanta, to 16c and 18c respectively, including 6c tax, **April 8.**

T.w. and s.s. cut 1c, Jackson, both to 13c, including 5c tax, **April 8.**

T.w. and s.s. cut 2c, Pensacola, to 16c and 18c respectively, including 6c tax, **April 6.**

Magnolia Petroleum—T. w. and s. s. up 1c, thru Oklahoma, to cover tax increase to 5c, **March 26.**

Continental Oil—Dealer discounts at Boise advanced to 3c, April 8; at Twin Falls, to 4.5c, **April 1.**

T. w. only cut 2c, Grand Junction, to 16c, **April 7.**

S. O. California — Wholesale price cut 2c, Reno, to 20c, including 4c tax, **April 10.**

Tank truck and wholesale prices cut 1c, Spokane, to 17c and 21c respectively, including 5c tax, **April 10.**

Kerosine

Atlantic Refining—Kerosine up 1c, thru Massachusetts and Rhode Island, to 11c t. w., **March 27.**

Magnolia Petroleum—Kerosine cut 1c, Dallas, to 10c t. w., **April 1.**

S.O.NEW JERSEY TERRITORY

	T.W.	Tax	Gasoline Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	11.2	3	14.2	16.2	11.5
Newark, N. J.	10.2	3	13.2	15.2	10.5
Annapolis, Md.	11.7	4	15.7	16.7	11
Baltimore, Md.	10.9	4	14.9	15.9	9.5
Cumberland, Md.	12.7	4	16.7	17.7	12
Washington, D. C.	11.4	2	13.4	14.4	10.7
Danville, Va.	12.5	5	17.5	18.5	11.8
Norfolk, Va.	11	5	16	17	10
Petersburg, Va.	12	5	17	18	11.3
Richmond, Va.	11.4	5	16.4	17.4	10.7
Roanoke, Va.	12.7	5	17.7	17.0	12
Charleston, W. Va.	12.2	4	16.2	17.2	11.5
Keyser, W. Va.	12.8	4	16.8	17.8	12.1
Parkersburg, W. Va.	10.9	4	14.9	15.9	10.2
Wheeling, W. Va.	12.1	4	16.1	17.1	11.4
Charlotte, N. C.	11	6	17	18	11
Hickory, N. C.	13.3	6	19.3	20.3	12.6
Mt. Airy, N. C.	13.2	6	19.2	20.2	12.5
Raleigh, N. C.	12.9	6	18.9	19.9	12.2
Salisbury, N. C.	13.2	6	19.2	18	12.5
Charleston, S. C.	11	6	17	18	10.3
Columbia, S. C.	12.9	6	18.9	19.9	12.2

Note: 2c per gallon discount off retail t.w. price of gasoline to dealers thru S. O. New Jersey territory, except Maryland and Washington, D. C. where discount is 3c.

S. O. NEW YORK

	T.W.	Tax	Gasoline Total T.W.	S.S.	Oil T.W.
Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	11.3	2	13.3	15.3	10
Borough of Richmond	11.7	2	13.7	15.7	12
Albany, N. Y.	12.6	2	14.6	16.6	10.5
Buffalo, N. Y.	11.8	2	13.8	15.8	10
Rochester, N. Y.	12	2	14	16	10
Syracuse, N. Y.	12.8	2	14.8	16.8	10.5
Boston, Mass.	11.5	2	13.5	15.5	11
Augusta, Me.	12.8	4	16.8	18.8	12.8
Manchester, N. H.	12.4	4	16.4	18.1	11
Burlington, Vt.	13.3	4	17.3	19.3	11
New Haven, Conn.	12.6	2	14.6	16.6	12.6
Providence, R. I.	10.3	2	12.3	15.7	11

Discounts on gasoline: 2c per gal. off posted t. w. price to dealers, thru territory, except 3c to dealers nNew York City, effective Feb. 20, 1931.

ATLANTIC REFINING

			Gasoline Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Pittsburgh, Pa.	12	*	12	17	12
Philadelphia, Pa.	12	*	12	17	12
Allentown, Pa.	12	*	12	17	12
Erie, Pa.	12	*	12	17	12
Scranton, Pa.	12	*	12	17	12
Altoona, Pa.	12	*	12	17	12
Dover, Del.	12	3	15	17	12
Wilmington, Del.	12	3	15	17	12
Boston, Mass.	11.5	2	13.5	15.5	11
Springfield, Mass.	12.5	2	14.5	16.5	11
Worcester, Mass.	12.3	2	14.3	16.3	11
Fall River, Mass.	12.1	2	14.1	15.1	11
Providence, R. I.	11.7	2	13.7	15.7	11
Hartford, Conn.	12.5	2	14.5	16.5	10
New Haven, Conn.	12.6	2	14.6	16.6	10
Atlantic City, N. J.	11.5	3	14.5	16.5	11.5
Camden, N. J.	10.6	3	13.6	15.6	10.6
Trenton, N. J.	11	3	14	16	11
Annapolis, Md.	12	4	16	17	11
Baltimore, Md.	11.2	4	15.2	16.2	9.5
Hagerstown, Md.	12.7	4	16.7	17.7	11.7
Richmond. Va.	11.7	5	16.7	17.7	10.7
Wilmington, N. C.	11.4	6	17.4	18.4	10.4
Brunswick. Ga.	12	6	18	20	**14
Jacksonville, Fla.	11	6	17	19	12

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics.

*3-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosine prices include 1c state tax.

S. O. KENTUCKY

	T.W.	Tax	Gasoline Total T.W.	S.S.	Oil T.W.
Lexington, Ky.	12	5	17	18	12
Louisville, Ky.	11	5	16	17	11
Paducah, Ky.	12	5	17	18	11
Covington, Ky.	11	5	16	17	11
Jackson, Miss.	8	5	13	13	11.5
Vicksburg, Miss.	11	5	16	18	11.5
Birmingham, Ala.‡‡	13	4	17	19	13
Mobile, Ala.‡	13	4	17	19	13
Montgomery, Ala.*	13	4	17	19	13.5
Macon, Ga.	12	6	18	20	†13
Atlanta, Ga.	10	6	16	18	*†12.5
Augusta, Ga.	12	6	18	20	†14
Savannah, Ga.	12	6	18	18	†12
Jacksonville, Fla.	11	6	17	19	12
Miami, Fla.	12	6	18	20	13
Tampa, Fla.	11	6	17	19	12
Pensacola, Fla.**	10	6	16	18	13

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosine at Montgomery included.

†Georgia kerosine prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax.

*†3c discount off t.w. price of oil at Atlanta, meeting competition.

S. O. OHIO

	T.W.	Tax	Gasoline Total T.W.	S.S.	Oil T.W.
Ohio statewide	12	4	16	17	13
Defiance, Hancock, Marion and Wyandot counties	12	4	16	16	13

Note: Discount on gasoline to dealers and commercial consumers generally thru Ohio is 2c per gal. off above t.w. prices.

Discount on kerosine to dealers and commercial consumers is 3c per gal. off t.w. price thru Ohio.

Above prices include these inspection fees on both gasoline and kerosine, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosine; Arkansas, 1/20c on both; Florida, 1/8c on both; Illinois, 3/100c on both; Indiana, 2/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 1/5c to 1/2c on both; Nebraska 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosine; Wisconsin, 1/25c on both.

Kerosine inspection fees only, per gallon; Iowa 7/100c; Michigan, 1/5c to 4/5c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

These Prices in Effect April 13, 1931, as Posted by Principal Marketing Companies

S. O. INDIANA

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Chicago, Ill.	11	3	14	14	9
Decatur, Ill.	11.4	3	14.4	14.4	9
E. St. Louis, Ill.	10.7	3	13.7	13.7	8.2
Joliet, Ill.	11.4	3	14.4	14.4	9
Peoria, Ill.	11.4	3	14.4	14.4	9
Quincy, Ill.	11.2	3	14.2	14.2	8.8
Springfield, Ill.	11.4	3	14.4	14.4	9
Indianapolis, Ind.	11.3	4	15.3	15.3	10.1
Evansville, Ind.	11.1	4	15.1	15.1	9.9
South Bend, Ind.	11.4	4	15.4	15.4	10.2
Detroit, Mich.	11.8	3	14.8	14.8	10.7
Grand Rapids, Mich.	11.7	3	14.7	14.7	10.6
Saginaw, Mich.	11.9	3	14.9	14.9	10.8
Green Bay, Wisc.	11.6	4	15.6	15.6	9.4
Madison, Wisc.	11.3	4	15.3	15.3	9.1
Milwaukee, Wisc.	11.1	4	15.1	15.1	8.9
La Crosse, Wisc.	12.2	4	16.2	16.2	10
Minneapolis, Minn.	12.2	3	15.2	15.2	9.9
Duluth, Minn.	12.5	3	15.5	15.5	9.9
Mankato, Minn.	10.1	3	13.1	15	9.7
Des Moines, Ia.	11.5	3	14.5	13.5	9.3
Davenport, Ia.	11.5	3	14.5	14.5	9.3
Sioux City, Ia.	11.1	3	14.1	13.1	8.9
Mason City, Ia.	11.5	3	14.5	14.5	9.3
St. Louis, Mo.	*8.9	2	10.9	10.9	8.3
Kansas City, Mo.	†11.9	2	13.9	13.9	7.6
St. Joseph, Mo.	†11.5	2	13.5	13.5	7.5
Fargo N. D.	13	3	16	16	11.9
Grand Forks, N. D.	14.2	3	17.2	17.2	12.2
Minot, N. D.	13.9	3	16.9	16.9	11.9
Pierre, S. D.	12	4	16	16	10.4
Huron, S. D.	12.3	4	16.3	16.3	10.7
Wichita, Kans.	9.8	3	12.8	12.8	7.8
Bartlesville, Okla.	9.5	5	14.5	16.5	7.5

*Includes city tax of ½c.
†Includes city tax of 1c.

Discounts: Effective April 11, 1931, S. O. Indiana's Q.D.A. on gasoline, in any quantity, off service station price, and thru territory, except Chicago, are:

To re-sellers only: on Ethyl gasoline, 3c per gal. off s.s. price; Red Crown, 2.5c per gal.; and on Stanolind Blue gasoline, 1c per gal. In Chicago, discounts are 1c higher in each instance than those shown above.

To consumers: same discounts as above for territory and Chicago, except discounts are based off tank wagon price, and affect purchases of 1,000 gallons or more per month.

S. O. NEBRASKA

Omaha, Neb.	11.25	4	15.25	17.25	9.25
McCook	12.75	4	16.75	18.75	10.75
Norfolk	11.75	4	15.75	17.25	9.75
North Platte	12.75	4	16.75	18.75	10.5
Scottsbluff	12	4	16	16	10.25

Note: Discounts: 1c per gal. off tank wagon price of gasoline for 1,000 gallon dumps per month to consumers taking tank wagon delivery only discount applying only at normal points.

S. O. LOUISIANA

	Posted Retail		Total Posted Retail	Posted Retail	
	T.W.	Tax	T.W.	S.S.	T.W.
Little Rock, Ark.	11	6	17	18	11
Alexandria, La.	11	*6	17	18	†12
Baton Rouge, La.	11	5	16	17	†12
New Orleans, La.	10	*6	16	17	†12
Lake Charles, La.	11	*6	17	18	†12
Shreveport, La.	11	5	16	17	†12
Lafayette, La.	11	*6	17	18	†12
Bristol, Tenn.	14	5	19	20	14
Chattanooga, Tenn.	13	5	18	19	13
Knoxville, Tenn.	13.5	5	18.5	19.5	13.5
Nashville, Tenn.	12.5	5	17.5	18.5	12.5
Memphis, Tenn.	10	5	15	16	10

Note: Discounts in S. O. La. territory: To dealers and commercial consumers from the tankwagon, 2c per gal. off posted retail t.w. price.

*Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 5c state tax and 1c parish tax. New Orleans kerosine price includes 1c parish tax in addition to 1c state tax.

†Kerosine price in Louisiana includes 1c state tax.

MAGNOLIA PETROLEUM

Muskogee, Okla.	8	5	13	16	8
Oklahoma City	6	5	11	13	8
Tulsa, Okla.	8	5	13	16	8
Fort Smith, Ark.†	11	4	15	16	11
Little Rock, Ark.	11	6	17	18	11
Texarkana, Ark.*	12	4	16	16	11
Dallas, Tex.	11	4	15	18	10
Fort Worth, Tex.	9	4	13	15	10
Houston, Tex.	10	4	14	18	11
San Antonio, Tex.	10	4	14	18	10
El Paso, Tex.	10	4	14	18	12

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

CONTINENTAL OIL

	Gasoline				Oil
	T.W.	Tax	Total T.W.	S.S.	T.W.
Denver, Colo.	11	4	15	18	12.5
Pueblo, Colo.	9	4	13	16	12
Grand Junc., Colo.	12	4	16	19	16
Casper, Wyo.	11	4	15	18	10
Cheyenne, Wyo.	12	4	16	19	11.5
Butte, Mont.	14	5	19	22	16
Helena, Mont.	15	5	20	23	16
Salt Lake City, Utah.	†14.5	3.5	18	17	16
Boise, Ida.	*16.5	5	21.5	..	18
Twin Falls, Ida.	**16.5	5	21.5	..	18
Albuquerque, N. M.	11	5	16	20	14

*Less 3c on gasoline at time of delivery.
†Less 4c on gasoline at time of delivery at Salt Lake.
**Less 4.5c on gasoline at time of delivery at Twin Falls.

S. O. CALIFORNIA

	State Tax	Gasoline Tank Truck	Gasoline Wholesale	Gasoline *Retail	Oil T.W
San Francisco, Cal.	3	9	15	12	15.5
Los Angeles, Cal.	3	7.5	13.5	10.5	15.5
Fresno, Cal.	3	9	15	....	17
Phoenix, Ariz.	5	17.5	18.5	21	20
Reno, Nev.	4	16	20	....	19
Portland, Ore.	4	11.5	17.5	14.5	16.5
Seattle, Wash.	5	11	17	14	16.5
Spokane, Wash.	5	17	21	....	20.5
Tacoma, Wash.	5	11	17	....	16.5

Note: No discounts off above gasoline prices; tank truck prices are those to resale trade.

***Retail prices are those of Standard Stations, Inc., marketing subsidiary of the Standard Oil Co. of California.**

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline				Oil
	T.W.	Tax	Total T.W	S.S	T.W.
ONTARIO					
Toronto	16	5	21	24.5	17
Ottawa	17	5	22	25.5	18
North Bay	20	5	25	30.5	21
Fort William	19.5	5	24.5	28	19.5
Border Cities, including Windsor	16	5	21	24.5	15
MANITOBA					
Winnipeg	18	5	23	27	18.5
SASKATCHEWAN					
Regina	22	5	27	31	22
ALBERTA					
Edmonton	23	5	28	31.5	23
Calgary	19.5	5	24.5	28	19.5
BRITISH COLUMBIA					
Vancouver	21	5	26	28	22
QUEBEC					
Montreal	17	5	22	25.5	18
Quebec City	19	5	24	27.5	20
Three Rivers	19	5	24	27.5	20
NEW BRUNSWICK					
St. John	18.5	5	23.5	27.5	20.5
Moncton	18.5	5	23.5	27.5	20.5
NOVA SCOTIA					
Halifax	18.5	5	23.5	27.5	20.5
PRINCE EDWARD ISLAND					
Charlottetown	18.5	5	23.5	27.5	20.5

Note: In districts surrounding these points 1c additional is added to city price.

NAPHTHA PRICES

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	10.7	12.7	14.2
Detroit	13.4	14.9	15.7
Kansas City	†11.9	†13.4	†14.2
Milwaukee	12.4	*15.9	*16.7
Minneapolis	**16.7	**18.2	**19
St. Louis	11.6	13.1	13.9
New York		14	20
Boston		17	20

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)	
New York harbor	10.00
Philadelphia district	10.00
Providence	10.50
Tank Wagon or Steel Barrels	
New York City	14
Syracuse	17
Rochester	18
Buffalo	16
Providence	17
Boston	17
Bridgeport	15
Newark	16
Philadelphia	14
Lancaster	17
Altoona	17
Baltimore	17

Note: 2c off above t.w. prices to large buyers in some instances.

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories showing state and municipal taxes:

S. O. NEW JERSEY

Prices in Effect April 13, 1931

	T.W.	Tax	Total T.W.
Newark, N. J.	16.9	*	16.9
Baltimore, Md.	16.2	4	20.2
Washington, D. C.	17	2	19

***New Jersey road tax of 3c does not apply on aviation gasoline, exemption being claimed at time of purchase.**

All above prices are on Stanavo Aviation Gasoline.

COLONIAL BEACON OIL CO.

New York City	17.5	2	19.5
Boston	17	2	19

S. O. PENNSYLVANIA

Philadelphia, Pa.	16	3	19
Pittsburgh, Pa.	16	3	19
Altoona, Pa.	16	3	19

S. O. OHIO

Thru Ohio	15	4	19

Discounts given by S. O. Ohio: For airport delivery only; 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over per month, 3c; 24,000 gals. and over per month, 4c.

S. O. INDIANA

Chicago	14	3	17
Indianapolis, Ind.	14.3	4	18.3
Detroit, Mich.	14.8	3	17.8
Milwaukee, Wis.	14.1	2	16.1
Minneapolis, Minn.	15.2	3	18.2
St. Louis, Mo.	13.4	2.5	15.9
Kansas City, Mo.	13.9	3	16.9
Fargo, N. D.	16.9	3	19.9
Huron, S. D.	15.3	4	19.3
Wichita, Kan.	12.8	3	15.8

In S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. Kansas City tax of 3c includes 1c city tax; St. Louis tax of 2.5c includes ½c city tax.

S. O. LOUISIANA

New Orleans, La.	18	6	24
Nashville, Tenn.	20	5	25
Memphis, Tenn.	19	5	24

2c per gal. discount off above posted retail t.w. prices to dealers and commercial consumers.

S. O. NEBRASKA

Omaha	16.25	4	20.25

4c per gal. refund to reseller.

CONTINENTAL OIL CO.

Denver, Colo.	14	4	18
Cheyenne, Wyo.	15	4	19
Helena, Mont.	18	5	23
Salt Lake City, Utah	†17.5	3.5	21
Albuquerque, N. M.	15	5	20
Boise, Ida.	*19.5	5	24.5

†Less 4c on aviation gasoline at time of delivery.
*Less 3c on aviation gasoline at time of delivery.

S. O. CALIFORNIA

Phoenix, Ariz.	17.5	4	21.5
Los Angeles, Cal.	16.5	3	19.5
San Francisco, Cal.	17	3	20
Reno, Nev.	21	4	25
Portland, Ore.	17.5	4	21.5
Seattle, Wash.	17.5	3	20.5
Spokane, Wash.	21.5	3	24.5

Note: 4c per gallon added to t.w. price, in S. O. California territory, to customers taking delivery direct into the fuel tank of planes.

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Freedom Filtered Kerosene Oil

FREEDOM

100% PENNSYLVANIA OILS

FO-502

NEW EQUIPMENT

Service Station Equipment Co., Conshohocken, Pa., manufacturer of Bennett dispensing equipment, Eco automotive servicing equipment and John Wood underground storage tanks, announced at its recent annual sales meeting its new DM line of displacement meter gasoline pumps and a redesigned line of Eco tireflators. Sales, field service and warehousing plans for the coming year were outlined at the meeting.

The company makes a complete line of service station equipment, including displacement and nutating type gasoline pumps, lube dispensing equipment, tire inflators, air compressors, car washers and storage tanks.

* * *

Fruehauf Trailer Co., Detroit, has developed a new model automatic semi-trailer. The new units are entirely automatic in coupling and uncoupling to permit time saving and avoid accident through error or forgetfulness of the driver.

The frame of the new trailer is of pressed steel throughout, a radical change from the old construction of built-up structural steel. Side rails on larger models have a maximum depth of 12 inches and taper at both front and rear, away from the point of greatest stress. Flanges are wide to give surplus strength.

Auxiliary wheels or landing gear have been simplified and strengthened with all operating parts contained within the flanges of the frame section. Convenient adjustment is provided for increasing or reducing the height to accommodate any height tractor frame or tire size.

Brakes have been enclosed in pressed steel shields removable for easy inspection and adjustment. A new feature is the power brake lock. This permits full use of power brakes as a parking brake when the trailer is disconnected or a service brake when the unit is in operation. Operation is from the tractor cab. When brakes are applied from the cab they are locked in that position even after the tractor is disconnected. The brake lock automatically releases when the coupling operation is completed. It can be manually released from the side of the trailer.

The new design has resulted in the saving of several hundred pounds in the weight of large models and proportionate savings in the smaller ones.

* * *

The Merco Nordstrom Valve Co. has moved its Los Angeles office into new and larger quarters at 1709 West 8th St., according to H. Boezinger, manager for southern California. The company was formerly on south San Pedro St.

Crude Oil Prices (in Effect April 13, 1931)

Crude prices for the whole year in OIL PRICE HANDBOOK published annually

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Bradford—Alleghany district (posted by Tide Water Pipe Co., Ltd.) (Effective Nov.12,1930) $2.15
Penna. Grade Oil in National Transit Lines (Effective Nov. 12, 1930).....*1.85
Penna. Grade Oil in Southwest Penna. Pipe Lines (Effective Nov. 12, 1930)..... 1.80
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) (Effective Nov. 12, 1930).. 1.70
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) (Effective Nov. 12, 1930) .1.45
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective March 11, 1931)..... 0.80
Somerset oil in main system of Cumberland Pipe Line (posted by Ashland Refining Co.) (Effective March 6, 1931).....$0.75
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 9, 1929).....$0.60
*Oil run prior to July 1, 1929 is 5c less per bbl.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective April 1, 1931).....$0.60

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon), effective March 5, 1931, same gravity and price schedule as Stanolind posts in Oklahoma, Kansas and North Texas, which see below.

(Posted by Pure Oil Co.)

Midland, Midland County (March 13, 1931)..$0.75

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective March 6, 1931

Wooster	$0.99	Princeton	$0.80
Lima	0.90	Illinois	0.80
Waterloo	1.20	West Kentucky	0.75
Indiana	0.50		

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Effective Oct. 28, 1930

Petrolia.....$1.50
Oil Springs..... 1.57

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of *Stanolind Crude Oil Purchasing Co. (In Oklahoma, Kansas, North and North Central Texas)

Effective March 5, 1931

Below 29	$0.43	35-35.9	$0.57
29-29.9	0.45	36-36.9	0.59
30-30.9	0.47	37-37.9	0.61
31-31.9	0.49	38-38.9	0.63
32-32.9	0.51	39-39.9	0.65
33-33.9	0.53	40 and above	0.67
34-34.9	0.55		

*Prairie Oil & Gas withdrew postings in Oklahoma, Kansas and Texas, Jan. 1, 1931.

On March 5, 1931 these crude purchasers met above prices: Continental Oil Co., Eason Oil Co., Mid-Continent Petroleum Corp., Standard Oil Co. of Kansas, Tidal Refining Co., White Eagle Oil & Refining Co.

On March 10, 1931, these met Stanolind: Humble and The Texas Co.

Humble Oil & Refining Co.

Effective March 10, 1931

In North Texas, Ranger, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona fields, all in Texas, same prices as Stanolind, which see.

Magnolia Petroleum Co.
(In Oklahoma, Kansas, North, *East and East Central Texas)

*Effective March 5, 1931

Magnolia posts same prices in all three states as Stanolind, except these lower grades:

Below 26	$0.40	27-27.9	$0.42
26-26.9	0.41	28-28.9	0.43

*Effective March 26, 1931, in East Texas.

Carter Oil Co.
(Oklahoma and Kansas)

March 10, 1931, same prices as Stanolind, which see.

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective March 10, 1931

Hutchinson and Carson Counties:

Below 35	$0.38	38-38.9	0.46
35-35.9	0.40	39-39.9	0.48
36-36.9	0.42	40 and above	0.50
37-37.9	0.44		

Gray County:

Below 35	$0.43	38-38.9	$0.51
35-35.9	0.45	39-39.9	0.53
36-36.9	0.47	40 and above	0.55
37-37.9	0.49		

Above prices met by Magnolia and The Texas Co. on March 10 in Hutchinson, Carson and Gray counties.

Wheeler County: Posted by Magnolia Pet. Co. Effective Apr. 10, 1930. Humble withdrew Wheeler county postings Apr. 10, 1930.

Below 30	$0.755	37-37.9	$1.11
30-30.9	0.805	38-38.9	1.145
31-31.9	0.855	39-39.9	1.18
32-32.9	0.905	40-40.9	1.215
33-33.9	0.955	41-41.9	1.25
34-34.9	1.005	42-42.9	1.285
35-35.9	1.04	43-43.9	1.32
36-36.9	1.075	44 and above	1.355

WEST TEXAS and NEW MEXICO

Humble Oil & Refining Co.

Effective March 10, 1931

Pecos and Winkler, (West Texas) and Lea County, N. M., all grades.....$0.40
Crane, Upton, Crockett, Ector, Howard and Glasscock Counties, all grades.....$0.35

March 10, 1931, The Texas Co. same prices in Crane, Upton, Winkler and Lea counties as Humble.

Oct. 28, Magnolia same prices in Winkler, Crane, Upton, Howard, Glasscock and Mitchell counties.

SOUTH and SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

All Effective March 10, 1931

Mirando (Jan. 15, 1931).....$0.69
Salt Flat 0.60
Darst Creek..... 0.60
Pettus, Bee County..... 0.95

(Posted by Magnolia Petroleum Co.)

Corsicana Heavy.....$0.45
Luling..... 0.45

(Posted by The Texas Co.)

Markham.....$0.50

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto, Sabine, Cotton Valley, Sarepta and Carterville.

Effective March 10, 1931

Below 29	$0.43	35-35.9	$0.57
29-29.9	0.45	36-36.9	0.59
30-30.9	0.47	37-37.9	0.61
31-31.9	0.49	38-38.9	0.63
32-32.9	0.51	39-39.9	0.65
33-33.9	0.53	40 and above	0.67
34-34.9	0.55		

Smackover, all grades.....$0.45
Bellevue..... 0.45
*Urania, La. (Oct. 30, 1930)..... 0.75
†East El Dorado (Calion)..... 0.45

*Posted by Louisiana Oil Refining Corp.
†Posted by Magnolia Petroleum Co.

March 10, 1931, The Texas Co. same schedule in Louisiana as Standard.

March 10, Magnolia met Standard schedule in Louisiana-Arkansas fields except it posts the same low grades in La.-Ark. as in Mid-Continent.

Stephens, Arkansas
Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective March 10, 1931

Below 29.....$0.38 29 and above...$0.41

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Jan. 14, 1931

Grades A	$0.80	32-32.9	$0.85
Grades B:		33-33.9	0.87
Below 25	0.69	34-34.9	0.89
25-25.9	0.71	35-35.9	0.91
26-26.9	0.73	36-36.9	0.93
27-27.9	0.75	37-37.9	0.95
28-28.9	0.77	38-38.9	0.97
29-29.9	0.79	39-39.9	0.99
30-30.9	0.81	40 and above	1.01
31-31.9	0.83		

On Oct. 28, The Texas Co. posted same prices on Grades A and B Gulf Coast crude as Humble.

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Humble, Pierce Junction, Sugarland, Refugio county, and Raccoon Bend. All other fields are Grades A only.

Specifications for Grade "A" crude: Gravity: 25° and below, at 60° F; Viscosity: not less than 100 seconds at 100° F. Saybolt.
Sulfur: not over .4%.
Grade "B" includes all Coastal crude which does not meet the test for "A" grades.

WYOMISSING, Pa.—Station number eight is being built by the Standard Gasoline Co. It is at Douglasville, Berks county, Pa. C. A. Goldsmith, general manager and vice president, will operate it. Headquarters of the company are at Wyomissing.

Master Electric Buys Airplane

DAYTON, O., April 10.—The first airplane to be owned and used by a manufacturer of motors to furnish better service to customers, is the four-passenger cabin monoplane recently acquired by The Master Electric Co., manufacturer of Master motors here, according to J. H. Howell, of the company's public relations department.

The plane will be used to dispatch motors and parts to customers quickly and to acquaint customers with the latest additions in service. E. P. Larsh, president and general manager, Capt. R. A. Von Derau, pilot and Mr. Howell will make trips to call on customers.

Chek-Chart Expands

CHICAGO—More space, an editor and advisory board of engineering are recent additions to The Chek-Chart Corp., 624 South Michigan Ave., Chicago, organized a year ago to supply the oil industry with authoritative information on lubrication of passenger cars.

J. Howard Pile is the editor of Chek-Chart. The board is composed of leading oil companies, to whom any engineering problems of a character that only those thoroughly trained in such problems can pass upon.

Another new undertaking is the publication of the Service Man's Guide to Automotive Lubrication by John B. Rathbun, in collaboration with Mr. Pile. It covers the practical side of passenger car lubrication.

Later it is planned to issue a still-film outlining each step in the lubricating of an automobile. Merchandising plans to show service stations how to get greasing business and how to increase gasoline and motor oil sales, are also future plans, according to Ray Shaw, president.

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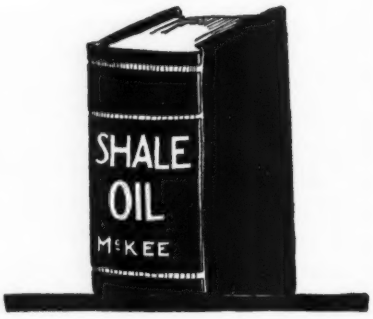

If you are interested in the great problem of supplying the world with fuel—get a copy of SHALE OIL.

It is written by men who have devoted years to the investigation of oil shale resources and their uses. R. H. McKee, professor of chemical engineering, Columbia Univ., is chief editor, and other oil shale specialists have contributed chapters as follows:

Origin of Oil Shales—Geology and distribution—Kerogen, the oil yielding material—Fundamental factors in analyzing and evaluating—Refining of shale oils—Nitrogen constituents—Basic factors of industry—Distillation plants—Patents. 325 pages—profusely illustrated, $6.

FRACTIONAL DISTILLATION

THE second edition of "The Elements of Fractional Distillation" by Clark S. Robinson is just out.

A large amount of new data is included in this second edition. For example, the recent work of W. K. Lewis and his associates on the vaporization and rectification of complex hydrocarbon mixtures, natural gasoline and petroleum; McAdams' study of the weathering of natural gasoline; Carey's and Smoley's studies of the efficiencies of rectifying columns, etc.

The last four chapters discuss the distillation and rectification of petroleum and natural gasoline, and the design of apparatus. Rectification of complex hydrocarbon mixtures, of natural gasoline, analysis of the data on weathering of natural gasoline; design of topping units with single and multiple columns; method of Lewis and Wilde for determination of the number of plates in a rectifying column is outlined, with tables and curves to be used.

"The Elements of Fractional Distillation" is well known to technical men in the oil industry, and fills a very definite place in the refinery library. Send for your copy today!

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Crude Oil Prices (in Effect April 13, 1931)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

ROCKY MOUNTAIN FIELDS
(Posted by Midwest Refining Co.)
(Salt Creek prices effective March 5, 1931)

Salt Creek, below 29°	$0.43
" " 29-29.9	0.45
" " 30-30.9	0.47
" " 31-31.9	0.49
" " 32-32.9	0.51
" " 33-33.9	0.53
" " 34-34.9	0.55
Salt Creek 35-35.9	0.57
" " 36-36.9	0.59
" " 37 and above	0.61

(Posted by Ohio Oil Co. and Midwest Refining Co.)

Elk Basin	$0.90
Grass Creek light	0.90
Big Muddy	0.65
Lance Creek	0.98
Rock Creek	0.66
Mule Creek	1.20
Rex Lake	1.10
Pondera	1.45
†Osage	0.50
†Cat Creek, Mont.	0.90
Sunburst, Mont.	1.55
†Hogback, N. Mex. (April 1, 1931)	0.90

†Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin. Others are prices of Ohio Oil Co.

CALIFORNIA CRUDE
†Standard Oil Co. of California
Effective March 31, 1931

Gravity	Signal Hill, Seal Beach, Alamitos Heights, Huntington Beach, Inglewood, Olinda-Brea Canon, Athens-Rosecrans-Dominguez, Torrance, Richfield, Whittier, LaHabra, Montebello, Coyote Hills and Santa Fe Springs	Elwood Terrace	Newhall, McKittrick, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills, Lost Hills, Coalinga and Wheeler Ridge	*Santa Paula	*Orcutt
14-19.9	$0.65	F.O.B. Ship	$0.55	$0.60	$0.55
20-20.9	.65		.53	.58	.53
21-21.9	.62		.51	.56	.51
22-22.9	.59		.49	.53	.49
23-23.9	.56		.47	.50	.47
24-24.9	.53		.45	.47	.45
25-25.9	.50		.43	.44	.43
26-26.9	.47		.41	.41	.41
27-27.9	.44		.39	.38	.39
28-28.9	.41		.37	.35	.37
29-29.9	.38		.35	...	.35
30-30.9	.35		...	...	...
31-31.9	.35		...	...	...
32-32.9	.35		...	...	...
33-33.9	.35		...	...	...
34 and above	.35	$0.35	...	...	...

*Posted by Union Oil Co. of California, effective March 30, 1931.

†Postings on Kettleman Hills crude discontinued by Standard. March 10, 1931; on Playa del Rey, March 31,1931.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	April 13	April 6
Soda Ash Light 58% bags, cwt.	$1.20-1.38	$1.20-1.38
Silicate of Soda 60 deg. drums, cwt.	$1.75-1.90	$1.75-1.90
Silicate of Soda 40 deg. tank cars, cwt.	$0.70	$0.70
Silicate of Soda 40 deg. drums, cwt.	$1.00	$1.00
Sal Soda wks.	$0.90-1.20	$0.90-1.20
Caustic Soda 76% solid, cwt.	$2.25-2.50	$2.25-2.50
Sulfuric Acid 60 deg. tank cars, f. o. b. shipping point per ton	$11.00-12.50	$11.00-12.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks., lb.	1.75	1.75

Compounders' Supplies

	April 13	April 6
Vegetable Oils		
Linseed carloads, spot, lb.	9.20	9.20
Tanks, spot	8.60	8.60
Soya Bean, Tank, coast, lb.	7.10	7.10
Oleic Acid		
Distilled, tanks, lb.	7.50	7.50
Distilled, bbls, lb.	8.375	8.375
Saponified, tanks, lb.	7.75	7.75
Saponified, bbls, lb.	8.625	8.625
Lard Oils		
Prime Winter Strained, lb.	13.00	13.00
Extra Winter Strained, lb.	9.75	9.75
Extra, lb.	9.50	9.50
Extra No. 1, lb.	9.00	9.00
No. 1, lb.	8.75	8.75
No. 2, lb.	8.50	8.50
Tallow oil, lb.	8.25	8.25
Neatsfoot Oil		
Pure, bbls, lb.	11.25	11.25
Extra, bbls, lb.	9.25	9.25
No. 1 bbls, lb.	9.00	9.00
Cold Pressed, lb.	16.00	16.00
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	38–40	38–40
Light Pressed, tank cars, N. Y., gal.	30–32	30–32
Yellow bleached, gal.	42	42
Whale, extra winter bleached, gal.	80	80
Naval Stores		
Steam, distilled turpentine, N. Y., gal.	50	50
Steam, distilled turpentine, Savannah, gal.	48	48
Gum turpentine, N. Y., gal.	54-56	54-56
Gum turpentine, f. o. b. cars Savannah, gal.	48-50	48-50
Wood Rosin, N. Y., bbl.	$5.30	$5.30
Wood Rosin F, Savn'h, bbl.	$5.20	$5.20
Gum Rosin B, N. Y., bbl.	$4.80	$4.80
Gum Rosin B, f. o. b. cars Savannah, bbl.	$4.05	$4.05
Rosin oil, pure, gal.	54	54
Rosin, oil, compounded, gal.	48	48
Pine Tar		
Kiln burnt, bbl.	$10.00-11.00	$10.00-11.00
Retort, bbl.	$11.50-12.50	$11.50-12.50
Alcohol		
Denatured Formula 5, in tanks, per gal.	24	24

More Gasoline For These Autos

PHILADELPHIA—As an indication of future gasoline markets, the annual statistical number of Automotive Industries pointed out that, despite world economic depression, world motorization increased 2.1 per cent in 1930.

On Jan. 1, 1931, there were 35,810,768 motor vehicles in operation in America, Africa, Asia, Europe and Oceania, the United States contributing only slightly to the increase in auto registrations.

France led the world in percentage of gain, with an increase of 178,000 motor vehicles in 1930.

The world, outside of the United States, passed the 9,000,000 mark for automobiles for the first time, a gain of 7.2 per cent over 1929.

Car Demand Estimate Indicates Gain in Oil Consumption

WASHINGTON, April 3

TWO bright spots on the business horizon, as far as our industry is concerned, were reported in Washington this week by the American Railway Association.

One was the forecast of an increase of 1.9 per cent in the demand for cars for loading petroleum products in the second quarter of 1931 over the second quarter of 1930.

The other was a small increase in the loadings of miscellaneous freight and less than carload shipments, which indicate a slight upturn in retail buying.

Demand for petroleum cars in the second quarter of 1931 has been estimated by Shippers' Regional Advisory Board, which pool the opinion of 16,000 observers, at 642,345. The actual loadings in the second quarter of 1930 totaled 630,642 cars. With an increased volume of petroleum, including gasoline, being shipped in pipelines, it is reasonable to assume from this estimate that actual demand for petroleum products may increase more than 1.9 per cent as estimated in the demand for tank cars.

Shipments of only three other in a list of 29 leading commodities, are expected to be greater the second quarter of 1931 than in the corresponding time of 1930. These are: citrus fruits, 85.1 per cent increase; fresh vegetables other than potatoes, 2.9 per cent, and chemicals and explosives 1.7 per cent. The increase in fruit shipments is the result of the large crop this year.

Estimates of car demand were made by 13 regional committees. Increased demand for cars, which means increased spending money for the producing areas, is estimated for only the Pacific coast and Ohio Valley regions. The Pacific Coast region includes California, Arizona, Nevada, and parts of New Mexico. The Ohio Valley region covers Kentucky and parts of Ohio, Indiana, Virginia and West Virginia. The increased demand in the Pacific Coast region is estimated at 4.9 per cent over last year and the Ohio Valley at 2.4 per cent.

Demand for cars for automobiles, trucks and automotive parts is estimated at 14.8 per cent less than in 1930. Part of this decrease may be attributed to overland deliveries of motor vehicles. Overland deliveries mean gasoline consumption.

For all commodities the demand for cars is estimated at 7,029,231 for this year, as compared with 7,460,036 actual loadings last year, a decrease of 5.8 per cent.

Car loading reports for the last five weeks in the miscellaneous or general merchandise classification, and l. c. l. shipments show these totals:

Week ended	L. C. L.	Miscellaneous
Feb. 21	215,470	251,679
Feb. 28	198,569	250,097
March 7	220,465	266,579
March 14	220,325	267,894
March 21	222,227	283,778

The decline in the week ended Feb. 28 was attributed to the Washington's Birthday holiday.

An economist with a government department was not optimistic over the showing business in general has made this spring. While there is some improvement in many lines, he said the rise in the business curve was more gradual than is customary at this season.

This economist said business was spotty. Where one region may benefit from increased orders, another region may suffer because the other region's orders were obtained at its expense. He said this was true of the textile and shoe industries in which large orders have flown into the New England district but at the expense of other manufacturing districts.

Little hope was held out for general improvement until the fall in commodity prices is halted. Jobbers and large dealers will not buy in falling markets, it was pointed out.

The wage cuts in those industries that are working is another factor that is reducing buying power of consumers. Not only are those persons whose wages have been cut buying at a curtailed rate but other wage earners who fear they may suffer cuts, are buying only necessities and doing that buying sparingly.

A halt in the decline of commodity prices would restore confidence among business men, it was pointed out here, when that halt arrives buying will begin and more people will go back to work.

The Bureau of Public Roads this week issued revised automobile registration figures for motor vehicles in 1930. The number registered Dec. 31 was 26,523,779, a gain of 22,336 over 1929 registrations, or 0.08 per cent. This is the smallest gain in 25 years of the industry. It would seem that increased gasoline demand would have to come from this year's sales to new users or to multi-car families, from more driving and more powerful cars.

$90,000,000 of Gas Taxes Diverted

NEW YORK, April 4.—Diversion of about $90,000,000 in the past five years from gasoline tax funds collected by the various states for uses other than state highways, is estimated by the American Petroleum Institute in a recent report compiled from records of the U. S. Bureau of Public Roads.

These diverted funds are spent on schools, sea walls, oyster conservation, property tax reduction, state departments, fish hatcheries, reserve funds, port expenses and miscellaneous projects.

In the first half of 1930, the net return from gasoline taxes in the United States was $230,600,455, of which $12,833,287 or 6 per cent, were diverted from highways. In 1929, 10 per cent was diverted for other uses; in 1928 and 1927, 15 per cent and in 1926, 20 per cent.

Distillation—Fractionation

Practically every new development in oil distillation brought out the last few years has been covered in NATIONAL PETROLEUM NEWS.

Since the first of 1930, 19 articles have been published telling how to increase yield of products—how to improve quality—changes in equipment design—also 25 articles on modern refining practice. Here they are for your file reference:

1931

Rectifier, Pressure, Temperature Control Govern Quality of Gasoline April 8, p. 32-A

New distillation system employs thin film principle March 25, p. 59

Atmospheric and vacuum distillation of Mid-Continent crude March 11, p. 53

1930

Interlocked distillation controls are development of trend-analysis Nov. 12, p. 131

Distillation problems solved by 8-stream unit Sept. 24, p. 135

Distillation curve relation to motor fuel performance May 28, p. 49

Vacuum distillation of lubes and heavy oils apparatus for May 21, p. 88

Distillation equipment improvements in motor oil manufacture: vacuum still separates asphalt from lube fractions Apr. 30., p. 40-G

Thermodynamics will solve refining problems Apr. 23, p. 36

What to watch in distillation Apr. 23, p. 74

Selsyn motors facilitate remote control Apr. 9, p. 67

Distillation test and vapor pressure figure in new natural gasoline specifications March 19, p. 63

Progress in recording and control instruments March 19, p. 65

Significance of vacuum distillation test March 26, p. 72; March 19, p. 93

A.S.T.M. Distillation evaluates gasoline on composition March 12, p. 32-B

Depreciation of refinery equipment March 12, p. 32-D

Hydrogenation, Col. Burrell's discussion of Feb. 26, p. 61

Col. Burrell's series on modern refining science and practice, beginning Nov. 20, 1929 and ending May 28, 1930.

Vacuum distillation unit solves many problems Feb. 5, p. 69

The above list of articles is for your convenience in locating them in your file.

If you wish extra back copies, we shall be glad to supply them at 25c a copy. However, our stock of back numbers is limited and we are entirely out of some issues.

On numbers that are exhausted, we can have photostat copies made of the pages you wish at a cost of 40c per page, negative proof.

Libraries in the larger cities generally keep back files of National Petroleum News complete.

National Petroleum News

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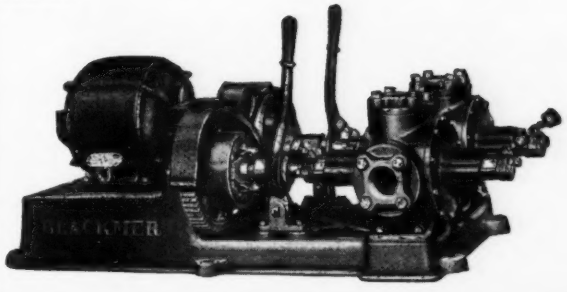
WHAT IS THE *BEST BUY in* ROTARY PUMPS

IN deciding this for yourself don't consider initial cost and initial efficiency alone. For in the final analysis the one thing that determines the greatest pump value is the ability of the pump to handle the greatest number of gallons at the lowest cost—*not for one day, or even a year, but year after year over the entire pump-life.* In each pump under your observation consider, in addition to the initial factors, what provision has been made to guarantee long-time, undiminished volume—how frequently worn parts would require replacing, and the cost of doing so. With these things in mind and the complete facts concerning Blackmer's exclusive bucket design before you, we feel confident you will agree with us as to which pump in the rotary field constitutes the best buy. May we send you the facts?



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Transactions in Oil Shares on New York Stock Exchange

1929 High	1929 Low	1930 High	1930 Low	Listed Shares	Par Value	Company	Div. Rate	Last Paid	Transactions Week Ended April 11 Sales	First	High	Low	Last	Change§
42⅝	17½	42¼	16½	922,075	N.P.	Amerada Corp.	50cQ	Jan. 30, 31	4,000	19½	19½	18½	19	— ½
64¾	12½	37	5⅛	209,180	N.P.	American Republics Corp.	....	....	2,000	8	8¼	7	7	— 1¼
47¼	34½	51	30	2,240,000	$25	Associated Oil.	50cQ	Mar. 31, 31	....	....	....	....	....	....
77⅞	30	51⅜	16⅜	2,683,868	25	Atlantic Refining Co.	25cQ	Mar. 16, 31	12,100	18	19¼	17⅞	19	+ 1⅛
49⅛	20	34	8⅜	2,257,108	25	Barnsdall Corp. A.	25cQ	Feb. 16, 31	21,100	11	11⅜	10½	11⅜	+ ⅜
34½	25	35	21	2,060,966	25	California Petroleum Corp.	....	Jan. 1, 29	....	....	....	....	....	....
32⅞	12½	20⅜	8¾	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	800	9	9	9	9	0
37⅜	18	30½	7¾	4,610,258	N.P.	Continental Oil (Delaware)	....	.....	18,000	9⅛	9⅜	8¾	9	0
94¾	42¼	71⅛	22⅜	410,857	$100	General Asphalt Co.	75cQ	Mar. 16, 31	10,100	29⅞	29⅞	27	28⅞	— ⅞
109	26	116⅞	29¼	250,000	100	Houston Oil.	....	.....	19,800	51½	55⅞	49	54½	+ 3½
..	..	10¼	6⅝	.....	..	Houston Oil, new.	....	.....	17,900	11⅞	12½	11	12⅛	+ ⅜
53	13⅛	28⅛	3	699,066	10	Indian Refining.	....	Dec. 15, 20	600	3⅜	3⅜	3¼	3¼	— ⅛
51¼	11½	27⅜	3½	568,816	10	do certificates.	....	....	....	....	....	....	....	....
38⅜	16½	29½	21¼	3,994,150	N.P.	Lago Oil & Transport.	....	Aug. 2, 27	....	....	....	....	....	....
18	7	12	3½	1,187,701	N.P.	Louisiana Oil Refining.	....	.....	1,900	4	4¼	4	4	0
100¼	80	89½	60	40,000	$100	do pfd.	$1.62½Q	Feb. 14, 31	....	....	....	....	....	....
18½	5⅞	10⅜	1¾	330,000	N.P.	Maracaibo Oil Exploration.	....	.....	700	2	2⅛	1⅞	2⅛	+ ⅛
295	176	182	150	459,428	$100	Mexican Petroleum.	$3Q	Jan. 20, 31	.....	....	....	....	....	.....
105	102	100	100	120,000	100	do pfd.	$2Q	Jan. 20, 31	.....	....	....	....	....	.....
69⅜	9¼	37	9¾	1,244,383	N.P.	Mexican Seaboard Oil.	....	Oct. 15, 24	172,700	16⅞	20¾	16⅜	20¼	+ 3¾
39⅞	22½	33	11	1,899,138	N.P.	Mid-Continent Petroleum.	50cQ	Feb. 16, 31	9,000	10⅝	11⅞	10½	10¾	— ⅛
3⅜	¾	2½	¾	908,171	N.P.	Middle States Oil ctfs.	....	.....	....	....	....	....	....	....
..	..	32	16	6,708,086	N.P.	Ohio Oil Co.	25cQ	Mar. 14, 31	26,500	13⅜	13⅜	12	12⅞	— ⅛
69	40¼	64¼	42	1,000,000	$50	Pan American Petrol. & Trans.	....	Oct. 20, 27	....	....	....	....	....	....
69¼	40½	67½	32	2,422,221	50	do B.	....	Oct. 20, 27	200	32	32	32	32	0
15¼	3	12¾	1¾	199,370	N.P.	Panhandle Prod. & Refg.	....	.....	1,700	2⅞	3	2½	2½	— ¼
76	47½	80	47½	25,666	$100	do pfd.	....	July 2, 23	20	....	18	17	18	+ 2
..	..	27½	6	2,937,900	N.P.	Petroleum Corp. of America.	37½cQ	Dec. 31, 30	5,600	7¾	8⅜	7¾	8⅛	+ ⅜
47	24¼	44¾	12	2,670,089	N.P.	Phillips Petroleum Co.	50cQ	Jan. 2, 31	31,000	10⅛	10⅝	9⅞	10	+ ⅛
3⅝	1	2½	½	1,184,917	$25	Pierce Oil Corp.	....	.....	1,400	⅞	⅞	⅞	⅞	0
51½	20	52	7½	150,000	100	do pfd.	....	Feb. 1, 22	1,300	13½	15	12¼	15	+ 2¾
5¼	½	7⅛	1⅜	2,500,000	N.P.	Pierce Petroleum Corp.	10c	Feb. 16, 31	1,300	2½	2½	2⅛	2¼	— ¼
65⅜	40½	54	11¼	2,435,670	$25	Prairie Oil & Gas Co.	50cQ	Mar. 31, 31	2,900	13¾	13⅞	13	13¾	+ 1⅛
65	45	60	16⅜	4,050,000	25	Prairie Pipe Line Co.	75cQ	Mar. 31, 31	10,400	20⅜	22⅞	20	22¼	+ 2⅛
25⅞	4	31	1	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 23	300	4	4	4	4	0
46⅜	25½	38	11½	56,907	50	do pfd.	....	May 4, 25	20	13½	13½	13½	13½	— 1¼
30⅜	20	27¼	7⅜	3,038,370	25	Pure Oil Co.	....	Sept. 1, 30	12,600	8⅜	8⅞	8⅛	8¼	— ⅜
116	108	114¼	90½	130,000	100	do 8% pfd.	$2Q	Apr. 1, 31	240	90	91	88	88½	— 1¼
49⅜	22⅜	28¼	4¾	2,891,735	25	Richfield Oil (California)	....	Sept. 1, 30	4,700	3	3	2¾	2⅞	— ⅛
42½	15	25¾	5	1,235,270	N.P.	Rio Grande Oil Co.	....	July 25, 30	5,300	7¼	7¾	7	7¼	+ ¼
64	43⅛	56½	37⅜	951,310	$13.40	Royal Dutch (N. Y. shares)	$1.3404	Jan. 31, 31	4,100	36¼	37	35⅞	36½	+ ½
55⅜	43⅜	48⅜	26	77,492	£2	Shell Trans. & Trading.	96.6c	Jan. 23, 31	....	....	....	....	....	....
31⅜	19	25½	5⅞	13,069,076	N.P.	Shell Union Oil Corp.	....	June 30, 30	7,000	6⅝	7½	6⅝	7¼	+ ½
..	..	106¼	62	400,000	100	do pfd.	$1.37½Q	Apr. 1, 31	800	48½	48½	47	47	— 1½
..	..	106	98	750,000	100	S. O. Export Corp. pfd.	$2.50S.A.	Dec. 31, 30	900	7	7½	6⅝	7½	+ ½
81⅞	51½	75	42¼	13,016,434	N.P.	S. O. California.	62½cQ	Mar. 16, 31	17,300	43¼	44¾	42⅝	44⅛	+ 1
..	..	49	14⅜	320,000	$25	S. O. Kansas.	25cQ	Mar. 16, 31	1,000	14⅞	15⅜	14⅞	15⅜	+ ½
83	48	84⅞	43½	25,443,643	25	S. O. New Jersey.	‡25cQ	Mar. 16, 31	61,050	42	44½	41½	43¼	+ 1⅜
48⅛	31¾	40⅜	19¾	17,809,530	25	S. O. New York.	40cQ	Mar. 16, 31	21,800	21⅝	22⅛	21⅛	22	+ ¾
86⅜	55	70	39	1,416,911	N.P.	Sun Oil Co.	25cQ	Mar. 16, 31	700	39⅞	41	39⅝	41	+ 1⅛
105½	100	107¾	97¾	100,000	$100	do pfd.	$1.50Q	Mar. 2, 31	340	....	104	102¾	103¾	+ ¾
24	5¼	9⅜	¾	1,026,979	N.P.	Superior Oil Corp.	.....	.....	800	1	1¼	1	1¼	+ ¼
71⅞	50	60½	28¼	9,850,724	$25	The Texas Corp.	75cQ	Apr. 1, 31	28,000	28⅛	29⅛	27⅝	28½	+ ⅜
23⅞	9½	14½	4	929,947	10	Texas Pacific Coal & Oil.	....	Dec. 31, 29	2,400	4⅝	4⅝	4½	4⅝	+ ⅛
23½	10	17¾	5⅞	5,881,980	N.P.	Tide Water Associated Oil.	30cS.A.	Feb. 16, 31	8,300	6¾	7	6⅝	6¾	— ⅛
90¾	74⅛	89¾	56	732,550	$100	do pfd.	$1.50Q	Jan. 2, 31	1,000	58¾	58¾	58⅛	58½	— ½
40	14	31	13	2,191,820	N.P.	Tide Water Oil Co.	20cQ	Dec. 31, 30	100	17⅞	17⅞	17⅞	17⅞	— ⅛
97½	85⅛	94⅞	71	199,443	$100	do pfd.	$1.25Q	Feb. 16, 31	100	68¼	68¼	68¼	68¼	0
..	..	24	12⅛	3,339,150	N.P.	Transcontinental Oil.	....	May 1, 30	....	....	....	....	....	....
57	42⅛	50	20⅜	2,201,008	$25	Union Oil Co. (California).	50cQ	Feb. 10, 31	5,100	21	21¾	21	21¾	+ ¾
..	..	38½	23	1,254,048	N.P.	Union Tank Car Co.	40cQ	Mar. 2, 31	....	....	....	....	....	....
42⅞	15	27	4½	777,603	N.P.	Warner Quinlan Co.	....	July 3, 30	400	5	5	4½	4½	— ⅛
38	25	29½	26	490,000	N.P.	White Eagle Oil & Refg.	....	Apr. 20, 30	....	....	....	....	....	....
29¾	12⅞	21	6½	428,967	N.P.	Wilcox Oil & Gas Co.	....	May 10, 28	5,000	7⅛	9	7⅛	8⅞	+ 1¾

*New high †New low ‡Also extra s-Stock §From close of preceding week. Total sales 603,970

Pittsburgh Stock Exchange

Transactions Week Ended April 10, 1931

	Sales	High	Low	Last	Change Over Week
Ark. Nat. Gas pfd.	338	7	6½	6½	— ½
Devonian Oil. . .	360	8	6	8	+1½
Leonard Oil & Dev.	250	1⅛	1	1	— ⅛
Lone Star Gas. . . .	7,623	20⅜	†19¼	19¾	— ½
Pgh. Oil & Gas. . .	127	1½	1½	1½	0
Plymouth Oil. . . .	325	12⅛	12	12	0
Shamrock O. & G.	2,319	9½	7½	9½	+1½
West. Pub. Serv..	3,370	10¼	10	10¼	— ⅛

†New low.

Pittsburgh Curb Market

Transactions Week Ended April 10, 1931

	Sales	High	Low	Last	Change
Gulf Oil.	150	63¼	61	61	....

C. C. Julian Indicted

HOUSTON, April 6.—C. C. Julian, California and Oklahoma oil promoter, was named in four or five indictments returned April 6 at Laredo in connection with alleged kidnaping and attempted extortion of $50,000 from L. S. Boling of Oklahoma City and San Antonio. C. C. Boren the promoter's secretary was named in three counts and Clay Mann an employe of the Julian Royalty & Oil Co. of Oklahoma City was named in four. One blanket indictment was returned jointly against Julian, Boren and Mann, in connection with an affair in a Laredo hotel April 2. Under a new emergency statute passed by present legislature it is possible to assess the death penalty for kidnapping in Texas.

Receiver Appointed for Western

LOS ANGELES, April 10.—Lack of working capital caused by recent price disturbances in Pacific Coast markets forced Western Oil & Refining Co. into a receivership in equity on the application of Olaf Halvorsen who claims the company owes him $63,000.

The action, that resulted in Robert G. Gillis being appointed federal receiver, showed the company had a total indebtedness of $1,500,000 and assets of approximately $7,800,000.

Western Oil & Refining, under the direction of Richard Florian, was primarily a refining, marketing, and exporting company with a 12,000-barrel skimming plant and a 4000-barrel cracking plant located on a 100-acre tract at the Los Angeles harbor. It also operated a marine terminal, being particularly active in marketing bunker fuel oil.

N. P. N. Service Record

Some of the requests for information, data and advice, which were taken care of in various National Petroleum News offices in the past week are:

Wisconsin oil jobber told whether there is any connection between the two oil companies he inquired about.

* * *

Illinois oil jobber told that he may obtain a bond covering service station and tank wagon men by applying to any reputable agent handling general insurance.

* * *

Missouri oil distributor furnished report on large western oil company indicating whether it is still controlled by the group the distributor inquired about.

* * *

Nebraska inquirer furnished report on oil promotion company in which she had bought stock.

* * *

Canadian oil jobber furnished list of United States automobile manufacturers.

* * *

Iowa inquirer given our views on an oil promotion company in which he had invested.

* * *

Ohio inquirer furnished names and addresses of Independent refiners in Kansas and Oklahoma.

* * *

Illinois inquirer furnished data on financial status of large Mid-Continent producer-refiner-marketer, and data on its production, refinery output and capacity, pipeline connections, officers, and earnings per share.

* * *

New Jersey inquirer told what we know about identity of oil company he mentions.

* * *

Pennsylvania oil marketer furnished information on broker who sold red dye for coloring gasoline.

* * *

President of Missouri oil jobbing company furnished names and address, sales managers names and railroad connections of plants of California and Montana refiners who could ship goods into three northwestern states.

* * *

Oil jobbers and marketers in South Dakota, Iowa, Illinois, South Carolina, California, Michigan, Connecticut, Ohio and Pennsylvania furnished names and addresses of those from whom they could buy the following products or equipment:

Second-hand gasoline pumps; steel drain racks; gasoline dyes; gasoline and motor oil; blue prints for service stations; dye manufacturers names and addresses; and display racks for oil.

* * *

California oil jobber furnished names and addresses of refiners of South Texas lube oils with Gulf Coast terminals.

* * *

Wisconsin oil jobber furnished references to seven N.P.N. articles on fire hazards at bulk plants and fire prevention measures; with which he wished to acquaint his tank wagon, service station and yard men; also referred to source which has prepared special data on this subject.

* * *

Toledo inquirer referred to source for maps on pipeline construction and completions, also directory of refineries.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

REFINERY SUPERINTENDENT — Twelve years experience erecting and operating skimming and cracking units. Now employed making $4,000. Married, 32, healthy. Will make good refinery manager. Address Box 696.

Situations Open

CHEMIST

for Eastern refinery, preferably graduate chemical engineer with three or four years experience in gasoline and lubricating oil work. Applicants should give full particulars, including present salary.

Address Box 691

SALESMAN WANTED

One familiar with tank car gasoline trade in Eastern Ohio and Western New York. In reply give full details regarding age, experience, references and salary expected.

Address Box 697

RESEARCH LABORATORY MAN WANTED

who is experienced in true boiling point and flash vaporization determinations and treating work.

Struthers-Wells Co., Warren, Pa.

Professional

L. G. Huntley J. R. Wylie, Jr.
William J. Millard

HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS

Grant Building PITTSBURGH, PA.

Patent Attorneys

ROYAL E. BURNHAM
Attorney-At-Law
Patent and Trade-Mark Practice Exclusively
Continental Trust Building
Washington, D. C.

Advertisers having box numbers should be addressed in care of National Petroleum News, 1213 West 3rd Street, Cleveland, Ohio, unless otherwise specified.

For Sale

JOBBING BUSINESS FOR SALE

in Eastern Iowa, junction of two U. S. Highways. Filling station and bulk plant, 65,000 gallon capacity. Good location. Plenty room for eat house and cabins.

Address Box 689

NEW BULK AND FILLING STATION. 35,000-gallon storage, located on Route 49 in Kankakee, Ill. Ideal layout. Priced right. Will operate for purchaser. Best location in City. Address Box 695.

Deep water terminal. Rail facilities, Tiverton, Rhode Island. Permit for 1,250,000 barrels. 87,500 barrels erected. May be bought reasonably. Can also arrange for barging and barge terminal with rail facilities in Boston, Mass. Excellent opportunity for anybody interested in petroleum distribution in New England.

Liberty Oil Company, Boston, Mass.

Business Opportunities

A NATIONAL SALES ORGANIZATION resources of one million dollars, established 25 years, having oil field supply offices and warehouses in Kansas City and Tulsa, wants additional lines of unquestionable merit, and of large volume, for distribution to oil producers and industrial plants in Kansas, Oklahoma and Texas. Dun credit rating A+A1.

Address Box 675

Miscellaneous

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Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

Standard Oil Stocks on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Outstanding Shares	Par Value	Companies	Div. Rate	Last Paid	Transactions Week Ended April 11 Sales	First	High	Low	Last	Change§
18⅝	13½	18½	12¼	.....	£1	Anglo-Amer. Oil voting stk. ctfs..	.....	June 5, 29	.....	.....	.....	.....	.....	.....
17¼	11	19	12	.....	£1	do non-voting stk. ctfs.....	.....	June 5, 29	.....	.....	.....	.....	.....	.....
2½	¾	1	¾	500,000	N.P.	Atlantic Lobos Oil.....	.....	.....	100	¾	¾	¾	¾	0
4⅛	1	1½	⅜	200,000	$50	do pfd.....	.....	.....	1,200	3¼	3¼	2½	2½	— ¾
46½	25	25	11¾	40,000	25	Borne Scrymser Co.....	$1S.A.	Oct. 15, 30	50	8	8	8	8	0
74¾	55	69	39½	200,000	50	Buckeye Pipe Line Co.....	$1Q	Mar. 14, 31	.....	.....	.....	.....	.....	.....
210	130	184⅞	100¼	120,000	25	Chesebrough Mfg. Co.....	‡$1Q	Mar. 31, 31	.....	.....	.....	.....	.....	.....
11⅜	5⅝	7⅜	3	.....	N.P.	Creole Petroleum Co.....	.....	.....	2,900	2⅞	2⅞	2½	2¾	0
75⅝	40	65⅝	20¼	30,000	$50	Cumberland Pipe Line Co.....	50cQ	Mar. 16, 31	.....	.....	.....	.....	.....	.....
70½	42	54⅝	26	50,000	100	Eureka Pipe Line Co.....	$1Q	Feb. 2, 31	200	28	28	28	28	+ ½
...	...	6⅝	2½	280,000	N.P.	Galena Oil Corp. w.i.....	.....	.....	.....	.....	.....	.....	.....	.....
...	...	37¼	23½	.....	N.P.	General Petroleum Corp. w.i.....	.....	.....	600	21½	21½	21½	21½	— ¼
128	74½	119	57¼	2,974,645	$25	Humble Oil & Refg. Co.....	‡50cQ	Jan. 1, 31	1,400	54⅞	55⅛	54¾	54¾	— ⅛
41	22	30	15	26,490,741	N.P.	Imperial Oil, Ltd.....	12½cQ	Mar. 2, 31	2,100	15	15⅛	14⅞	15	+ ⅛
42½	26	41	14½	300,000	$10	Indiana Pipe Line Co.....	50cQ	Feb. 14, 31	700	16¼	16⅛	16⅛	16⅛	0
29¾	15	24	11¾	14,247,880	N.P.	International Petroleum Co.....	25c	Dec. 15, 30	8,500	11⅞	12½	11⅞	12¼	+ ¼
25½	10½	22⅝	11½	509,000	$12½	National Transit Co.....	25cQ	Mar. 16, 31	900	14⅜	15	14⅜	15	+ ½
17⅜	10	21	10½	100,000	10	New York Transit Co.....	40cQ	Jan. 15, 31	300	10⅞	10⅞	10⅞	10⅞	0
63	41	54	26¼	40,000	50	Northern Pipe Line Co.....	$2S.A.	Jan. 2, 31	100	30	30	30	30	0
105½	103¾	108	100¾	600,000	100	Ohio Oil pfd.....	$1.50Q	Mar. 14, 31	.....	.....	.....	.....	.....	.....
44½	18¾	32	12	400,000	25	Penn Mex. Fuel Co.....	$1	Dec. 15, 30	100	13½	13½	13½	13½	— 1½
50	29	33	4½	160,000	25	Solar Refining Co.....	.....	Dec. 20, 29	.....	.....	.....	.....	.....	.....
23½	13	20¼	6¾	100,000	10	Southern Pipe Line Co.....	50c	Mar. 12, 31	.....	.....	.....	.....	.....	.....
60¼	35⅜	45⅞	18	1,200,000	25	South Penn Oil Co.....	25cQ	Mar. 31, 31	900	18	18	17⅞	18	0
70	45	64	32	35,000	50	Southwest Pa. Pipe Lines.....	$1Q	Apr. 1, 31	.....	.....	.....	.....	.....	.....
63	45	59⅛	30	16,850,587	25	S. O. Indiana.....	50cQ	Mar. 16, 31	22,100	31⅝	31¾	30⅝	31⅛	+ ⅝
46⅞	29	40½	18¾	2,577,124	10	S. O. Kentucky.....	40cQ	Mar. 31, 31	3,200	20⅜	21¼	20⅜	21	+ ⅝
50¼	40	48⅛	34	188,159	25	S. O. Nebraska.....	50cQ	Mar. 20, 31	100	28⅞	28⅞	28⅞	28⅞	— ⅛
129	60	108½	43¼	560,000	25	S. O. Ohio.....	62½cQ	Apr. 1, 31	500	49	57	49	55½	+ 6½
...	...	...	...	120,000	100	do 5% pfd.....	$1.25Q	Jan. 15, 31	250	104½	105¼	104½	105¼	+ ¼
124½	111½	122	115¼	70,000	100	do 7% pfd.....	$1.75Q	Dec. 1, 30	.....	.....	.....	.....	.....	.....
18	5¾	10	4	34,158	25	Swan Finch Oil Corp.....	...	Jan. 15, 29	.....	.....	.....	.....	.....	.....
133¾	75½	97⅛	45⅝	5,139,887	25	Vacuum Oil Co.....	$1Q	Mar. 20, 31	7,400	53⅞	53⅜	55⅛	55⅛	+ 1⅜

*New high †New low ‡Also extra §From close of preceding week.

Independent Oils on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Par Value	Companies	Transactions Week Ended April 11 Sales	First	High	Low	Last	Change§
.72	⅛	⅜	1/16	$1	Amer. Contr. Oilfields	.....	.....	.....	.....	.....	.....
8¼	1⅛	4½	½	5	Amer. Maracaibo.....	3,900	1⅜	1¼	1⅜	1⅛	0
4¾	1	1¾	1⅛	10	Argo Oil.....	.....	.....	.....	.....	.....	.....
26	3¾	16¾	4⅝	N.P.	Arkansas Nat. Gas...	400	5½	5½	5⅜	5⅜	0
24¾	6½	16½	4¾	N.P.	do Class A.....	9,300	5⅜	5¾	5⅝	5⅝	— ⅛
9	4	8⅛	6¼	10	do pfd.....	300	6½	6½	6½	6½	— ¼
70	50	28½	13½	N.P.	British American Oil..	.....	.....	.....	.....	.....	.....
4⅞	7/16	2¾	⅝	¼	Carib Syndicate.....	3,900	1⅝	1¾	1⅜	1½	0
68½	20	44¼	13⅜	N.P.	Cities Service.....	68,100	18⅜	18⅝	17⅝	18	— ½
99¼	84	93⅞	52	100	do pfd.....	800	83¾	83¾	83⅜	83¾	0
9¼	8	9	7¼	10	do pref. B.....	.....	.....	.....	.....	.....	.....
96	81	89⅛	80	100	do pref. BB.....	.....	.....	.....	.....	.....	.....
1½	1/16	1/16	1/16	1	Colombia Syndicate..	10,100	1/16	1/16	¼	¼	— 1/16
15	3⅜	8¼	1⅜	N.P.	Colon Oil Corp.....	100	2½	2½	2½	2½	0
...	...	21	3⅜	N.P.	Columbia Oil & Gas..	900	4⅝	4⅝	4⅝	4⅝	0
11⅜	2½	5⅞	2	10	Consolidated Royalty	1,100	1¾	1¾	1¾	1¾	— ⅛
135	42	74¾	1⅛	N.P.	Cosden Oil Co.....	2,100	1¾	1¾	1½	1½	— ½
87	55	70	10¼	100	do pfd.....	.....	.....	.....	.....	.....	.....
2⅜	⅛	1	¼	N.P.	Crown Central Pet...	1,100	1/16	1/16	1/16	1/16	+ 1/16
11½	4	..	..	N.P.	Crystal Oil.....	.....	.....	.....	.....	.....	.....
51⅛	51⅛	..	..	100	do pfd.....	.....	.....	.....	.....	.....	.....
26	6½	13½	4¼	N.P.	Darby Petroleum.....	100	3½	3½	3½	3½	0
..	..	21¾	21½	N.P.	do new.....	.....	.....	.....	.....	.....	.....
11	2	11	2	N.P.	Derby Oil & Refg.....	.....	.....	.....	.....	.....	.....
44	17	60	30	N.P.	do pfd.....	.....	.....	.....	.....	.....	.....
..	..	12	12	10	Devonian Oil.....	.....	.....	.....	.....	.....	.....
209	115	166⅛	58⅛	$25	Gulf Oil Corp.....	2,900	63½	64⅛	60¾	63½	+ ½
7½	1⅜	4	2⅛	N.P.	Homaokla Oil.....	.....	.....	.....	.....	.....	.....
..	..	47⅛	12¾	N.P.	Indian Territory A....	1,400	15⅞	15⅞	15⅜	15⅜	— ⅝
..	..	53½	12⅝	N.P.	do B.....	.....	.....	.....	.....	.....	.....
2⅛	⅜	1¾	⅜	10	Intercontinental Pet..	16,000	1/16	⅝	½	1/16	0
3⅝	1¼	3	⅞	N.P.	Kirby Petroleum.....	2,300	⅞	1⅜	⅞	1	+ ¼
6½	1	4¾	⅞	N.P.	Leonard Oil & Dev...	1,000	1	1	¾	¾	— ¼
38⅞	18	29	5	N.P.	Lion Oil Refg.....	200	5⅝	5⅝	5⅝	5⅝	— ⅛
67⅛	28	55⅞	19⅜	N.P.	Lone Star Gas.....	4,100	20	20⅛	19¼	19⅜	— ⅝
..	..	31	5½	$25	MacMillan Petrol.....	.....	.....	.....	.....	.....	.....
2⅛	⅛	⅛	⅛	1	Magdalena Synd.....	19,900	1/16	½	1/16	½	+ 1/16
38½	14	16	3	N.P.	Margay Oil.....	800	3½	5	3½	5	+ 1½
6⅜	2¼	7½	1⅜	N.P.	Mexico Ohio Oil.....	400	3⅝	3⅝	3⅜	3⅜	— ⅜
..	..	11⅞	2¼	N.P.	Middle States A v.t.c.	700	3¼	3¾	3¼	3¾	+ ½
..	..	6	¾	N.P.	do Class B v.t.c.	500	1	1	1	1	0
42	8	36⅛	5	5	Missouri-Kansas P.L.	8,500	7⅝	8	7⅛	7½	— ⅛
1½	⅛	¾	⅜	1	Mountain & Gulf Oil..	200	⅜	⅜	⅜	⅜	— ⅛
22⅞	7	12⅛	4½	10	Mountain Producers..	2,300	4⅜	4⅜	4¼	4⅜	— ⅛
43⅞	24	41⅜	19⅞	N.P.	Nat. Fuel Gas.....	1,400	22½	23¼	22¼	23¼	+ ¼
5	2¼	3½	1⅛	$5	New Bradford Oil....	300	1⅜	1⅜	1¼	1¼	— ⅛
4⅜	3⅛	3⅛	2⅛	10	New England Fuel....	.....	.....	.....	.....	.....	.....
24½	11⅜	16⅞	4	25	N. Y. Pet. Royalty...	.....	.....	.....	.....	.....	.....
18½	6¾	11¼	2⅛	N.P.	North Central Texas	.....	.....	.....	.....	.....	.....
19¼	8⅛	11⅜	3⅞	N.P.	Oilstocks Ltd. A.....	200	3	3	3	3	0
18¼	8½	11½	4¾	N.P.	do B.....	.....	.....	.....	.....	.....	.....
26⅜	12⅜	19⅛	6½	N.P.	Pacific Western Oil...	200	8	8	8¾	8¾	0
3½	½	2½	¼	N.P.	Pandem Oil.....	5,100	1/16	⅜	1/16	⅜	+ 1/16
10½	2¼	4⅜	1	N.P.	Pantepec Oil.....	100	1¼	1¼	1¼	1¼	0
25½	13⅛	15	13⅛	$25	Paragon Refg. B. ctfs.	.....	.....	.....	.....	.....	.....
28	17	29	19⅛	N.P.	Petroleum Corp.....	.....	.....	.....	.....	.....	.....
..	..	5⅞	½	..	do warrants.....	200	¾	¾	⅞	⅞	+ ⅛
37	22	27½	16¼	N.P.	Plymouth Oil.....	500	12	12	12	12	0
16	9	10½	3	$5	Red Bank Oil.....	.....	.....	.....	.....	.....	.....
8½	1⅜	5⅜	1	N.P.	Reiter-Foster Oil.....	1,400	1	1	1½	1½	+ ⅜
25¼	19	23½	7	25	Richfield Oil pfd.....	.....	.....	.....	.....	.....	.....
29	13	25	2¼	N.P.	Root Refining pr. pfd.	.....	.....	.....	.....	.....	.....
11	3	8⅛	2	N.P.	Ryan Consolidated...	.....	.....	.....	.....	.....	.....
5⅛	1⅜	2½	⅛	10	Salt Creek Consol.....	.....	.....	.....	.....	.....	.....
25⅞	9	15¼	5¼	10	Salt Creek Producers.	800	6¾	6¾	6⅝	6¾	+ ⅛
33¼	10	8	1¾	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
..	..	39⅛	39	25	Signal Oil & Gas A...	.....	.....	.....	.....	.....	.....
24	9	17	6	N.P.	Southland Royalty...	1,100	5	5	4⅝	4⅝	+ ⅛
12	4	10	2	5	Sunray Oil.....	3,300	3⅞	4	3⅝	3⅞	0
23	7⅛	19½	8	N.P.	Texon Oil & Land....	1,000	10⅝	10⅝	9¾	9¾	+ ¼
81¼	8⅞	16	8	10	Venezuela Mexico....	.....	.....	.....	.....	.....	.....
6½	1⅜	4½	¾	5	Venezuela Petroleum.	200	1	1	⅞	⅞	— ⅛
9¼	2	5	2	1	Woodley Petroleum...	100	3	3	3	3	0
5⅛	¼	2½	⅜	N.P.	Y Oil & Gas.....	300	⅝	⅝	½	½	0

*New High †New Low §From close of preceding week.

New York Bonds

Week Ended April 10

	High	Low	Last	Change§
Asso. Oil gold 6s.....	103¼	103¼	103¼	0
Atlantic Refg. deb. 5s...	103¼	102⅝	102¾	— ⅛
Cal. Pet. 5s.....	93	93	93	—1⅜
Cal. Pet. 5½s.....	96⅜	94½	94½	—2½
General Pet. 5s.....	103	102	102½	— ½
Humble Oil & Refg. 5s..	102⅝	102¼	102¼	0
Humble Oil & Refg. 5½s	102⅜	102⅜	102⅜	+ ⅛
Pan Amer. P & T 6s.....	102½	101½	102½	+ ¼
Pan Amer. P & T 6s.....	63⅛	62¼	62½	—1½
Phillips Pet. 5¼s.....	75	74	74	—1
Pure Oil 5½s.....	90½	88½	90	— ½
Pure Oil 5½s.....	86	84	85	—1
Richfield Oil of Calif. 6s.	55⅛	53⅞	53¾	—1¼
Shell Union Oil 5s.....	73½	71⅞	72¼	0
Shell Union Oil 5s with war.	74¾	71¾	73½	—1¼
Sinclair Con. Oil 7s.....	99	98	98½	0
Sinclair Con. Oil 6½s...	95⅛	94	95	+ ⅜
Sinclair Con. Crude 5½s.	102⅛	101¾	102⅛	+ ⅛
Sinclair Pipeline 5s.....	100	99½	99¾	+ ¼
Skelly Oil 5½s.....	73¼	72	72½	0
S. O. N. J. 5s.....	103⅝	103¼	103½	+ ½
S. O. N. Y. 4½s.....	98¾	98¼	98½	+ ¼
Union Oil of Calif. 6s A..	105½	105½	105½	— ½
Union Oil of Calif. 5s C..	100¾	100½	100½	0
Union Oil of Calif. 5s War.	95⅛	94	95	0
Warner-Quinlan 6s.....	53½	42¾	53¼	— ½
White Eagle Oil 5½s....	102¼	102¼	102¼	— ¼

New York Curb Bonds

Week Ended April 10

	High	Low	Last	Change§
Cities Serv. 5s '66.....	73½	73	73	— ½
Cities Serv. 5s '50.....	79⅛	77¾	78¼	— ⅝
Cities Serv. G. 5½s '42..	77¼	76¾	76¾	— ¼
Cities Serv. G. P. 6s '42..	86	85½	85½	— ¼
Cities Serv. P. 5½s '52..	82½	80¾	81	—1⅝
Cont. Oil 5¼s '37.....	93¼	93	93	— ⅛
Empire O & R 5½s '42..	74¾	74	74	— ⅝
Gulf Oil 5s '37.....	102½	102⅛	102½	+ ¼
Gulf Oil 5s '47.....	102¼	102	102	0
Indep. Oil 6s '39.....	86	76	86	+6⅛
Sun Oil 5½s '39.....	101¾	101½	101¾	— ⅛
Valvoline Oil 7s '37.....	98	98	98	— ⅛

The United States was the source of more than half of the gasoline imports of France during the first six months of 1930. We shipped 3,854,000 barrels of high grade gasoline, and 685,000 barrels of ordinary grade, out of her total imports of 7,600,000 barrels.

Persia, Russia and Rumania were the other three largest exporters to France.